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ABSTRACT

This six-part publication summarizes the main findings and conclusions of the second report on vocational education and training (VET) research in Europe. Part 1, VET Systems, Coordination with the Labor Market, and Steering, covers education and training systems, including regulation, coordination, steering and cooperation, finance, certification, and professionalism. Part 2, Lifelong Learning and Competencies: Challenges and Reforms, contains information on lifelong learning and competence, as well as differentiation in VET pathways and on-the-job training. Part 3, Training and Employment in a Company Perspective, examines the skills needed in a global economy, labor markets, the role of small and medium-sized enterprises in training and employment, entrepreneurship, and skills and training needs. Part 4, Employment, Economic Performance, and Skill Mismatch, focuses on employment in Europe, education, training, and economic performance, dynamics of labor markets, and skill mismatches and future needs. Part 5, Individual Performance, Transition to Working Life and Social Exclusion, provides a context for training and individual performance, the education work relationship, and social exclusion and reintegration through training. Part 6, VET Research Outside the European Union, profiles research in the countries of central and eastern Europe as well as in other nonEuropean Union countries. An annex lists 31 bibliographic contributions to the background of the second research report. (KC)

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Training and learning for competence

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Second report on vocational training research in Europe
executive summary

Training and learning for competence

Second report on vocational training research in Europe: executive summary

Pascaline Descy
Manfred Tessaring

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Abbreviations

Country abbreviations

A	Austria
AU	Australia
B	Belgium
BG	Bulgaria
CH	Switzerland
CA	Canada
CZ	Czech Republic
D	Germany
DK	Denmark
E	Spain
EE	Estonia
EL	Greece
Eng	England
EU	European Union
F	France
FIN	Finland
GB	Great Britain
HU	Hungary
I	Italy
IRL	Ireland
JP	Japan
L	Luxembourg
LV	Latvia
LT	Lithuania
N	Norway
NL	Netherlands
NZ	New Zealand
P	Portugal
PL	Poland
RO	Romania
S	Sweden
Sco	Scotland
SK	Slovakia
SL	Slovenia
UK	United Kingdom
US	United States of America

Frequently used abbreviations

(With a few exceptions no abbreviations are listed here concerning institutions, organisations, projects, training programmes and the like, in particular at national level.)

CEECs	central and eastern European countries
CVT	continuing vocational training
CVTS	continuing vocational training survey
ET	education and training
EU	European Union
HRD	human resource development
ICT	information and communication technologies
ISCED	international standard classification of education
IVT	initial vocational training
(C) LFS	(Community) labour force survey
SME	small and medium sized enterprise
TSER	targeted socio-economic research (programme of the European Commission)
VET	vocational education and training

Cedefop's reporting series on VET research in Europe

First research report

Cedefop, 1998. *Vocational education and training – the European research field. Background report 1998* (2 volumes). Tessaring M., ed. Cedefop reference document; 2 Volumes. Luxembourg: EUR-OP. 352 pp. (Volume I), 321 pp. (Volume II) - in English only

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Second research report

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Descy P., Tessaring M., 2000. *Training and learning for competence. Second report on current vocational training research in Europe: synthesis report 2000*. Cedefop Reference series. Luxembourg: EUR-OP. 441 pp. (in the course of the year 2001 also available in German, French and Spanish)

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ISBN 92-896-0020-9 (EN)

Price for the background report (3 Volumes) and the synthesis report (excluding VAT in Luxembourg): EUR 29.50

The research reports are available through the national EU sales offices only (see second last cover page).

Parts of the research report and this executive summary are also accessible through Cedefop's Electronic Training Village (www.trainingvillage.gr/etv/research/index.asp).

Training and learning for competence: executive summary

This publication summarises the main findings and conclusions of the second report on vocational education and training (VET) research in Europe 'Training and learning for competence' which is part of the reporting series Cedefop started in 1998. The aim of the reports is to give a comprehensive overview on the state of the art of VET research in Europe, on the main theoretical and conceptual approaches, on empirical findings and to discuss implications for policy, research and practice.

The summary that you have before you attempts to provide an overview on the main topics, findings and conclusions presented in the second research report. Readers who are interested to gain deeper insight into specific issues are invited to refer to the synthesis report and/or to the background report.

Introduction

Definition and role of vocational education and training

Broadly defined, vocational education and training (VET) comprises all more or less organised or structured activities – whether or not they lead to a recognised qualification – which aim to provide people with knowledge, skills and competences that are necessary and sufficient in order to perform a job or a set of jobs. Trainees in initial or continuing training thus undertake work preparation or adapt their skills to changing requirements.

VET is independent of its venue, of the age or other characteristics of participants, and of their previous level of qualification. The content of VET could be job-specific, directed to a broader range of jobs or occupations, or a mixture of both; VET may also include general education elements. However, the definition of VET and continuing training (CVT) in individual countries is different.

Function and objectives of VET research

Education and training policies, as with other policies, have to consider complex relationships between education and training and the socio-economic system. It is the task of research to shed light on these aspects in order to analyse, identify and explain these relationships, to improve our understanding of causes and effects, and to identify the means and strategies which are expected to be effective and acceptable in solving a problem.

In particular VET research aims to:

(a) describe and explain the systems, conditions and frameworks for processes involved in acquiring and updating vocational skills and competences;

(b) provide information on the interactions between VET and other areas of social action. Those interactions concern the legal and institutional framework, interdependencies with social, economic, technological and demographic change and the behaviour of the different actors in these fields;

(c) demonstrate its relevance to the option-seeking and decision-making of the various protagonists.

Reporting on VET research in Europe

The reports on VET research in Europe published regularly by Cedefop intend to improve transparency on VET research issues in Europe, by pooling the findings of different research disciplines and, at the same time, by properly positioning other fields of social action in terms of their relationship to initial and continuing vocational training. Furthermore, the reports indicate the implications of research results for the various protagonists concerned – politicians, institutions, social partners, enterprises, individuals – and draw attention to areas where research coverage is too thin and needs building up.

The second research report builds upon the first edition published in 1998/99. Some topics have been developed further, others have been updated to consider new research findings, and some have been introduced to reflect the current debate.

The second research report consists of three publications

(a) the *executive summary* that you have before you which attempts to provide an overview on the main topics, findings and conclusions presented in the second research report;

(b) a *synthesis report* which provides a comprehensive overview on the state of the art of VET research in Europe, on the main theoretical and conceptual approaches, empirical findings and implications for decision-makers and researchers;

(c) a *background report* (3 volumes, effectively the basis for the synthesis report) which contains contributions on different topics from renowned researchers across Europe.

The list of contributions to the background report can be found in the Annex. Other bibliographical references were not included in this summary. The reader may find all bibliographical references in the synthesis report.

Part one
VET systems, coordination with the labour market and steering

Part one of the report examines the coordination, financing and steering of vocational education and training (VET) systems. After providing a general review of coordination principles and the players involved, methods for financing initial vocational education and training (IVT), continuing vocational training (CVT) and vocational training for the unemployed are discussed. This Part of the report goes on to examine the reforms that have been introduced to improve VET's standing, new methods by which competences are being certified, and changes in the profiles of VET professionals.

1. Education and training systems: regulation, coordination, steering and cooperation

The purpose of steering is to ensure that education and training systems adapt, and respond adequately to, the needs of individuals, the labour market and society as a whole. The main function of coordination is to ensure a balance between the occasionally conflicting interests of the various players (State, employers and individuals).

In every country, VET has complex links with the economy, the labour market and employment. Moreover, its highly fragmented structure and many specialisations make a coordination difficult.

State-managed planning and demand-led steering by the market represent two opposite extremes among the mechanisms by which VET systems can be co-ordinated. Both types of steering are found in every system in differing degrees. In practice, steering is based on both systems, but new co-ordination methods also are explored, such as corporatist steering or the use of networks.

- In the case of *planned management*, the public authorities are responsible for matching supply to demand (from the point of view of both individuals and the labour market) and for organising training. State-led steering, through centralised planning, generally acts on the education supply. VET systems cannot, however, be steered solely by a State system as it is impossible to forecast changes in demand beyond a certain point.

- If *labour market demand is used to steer the system*, the following principles have to be adopted: decentralisation, deregulation and delegation of authority. Market regulation is based on feedback from VET users. The education and labour markets are interdependent.

- The market-State dichotomy has long been (and often still is) seen as the crux of the debate surrounding the methods of coordination between education and training systems. Every coordination model, however, has its weaknesses. All parties therefore seek to reach the best possible compromise – one which would allow the system to respond to market demand while avoiding excessive bureaucracy, and permit the use of alternative solutions, such as corporatist regulation or networks (bringing together players with varying interests), in order to make the VET system more flexible and improve its responsiveness.

Professional associations and the social partners play a coordinating role by bringing together players who in principle share similar interests. Employers' associations, trade unions, associations of teachers or parents, etc., thus provide a bridge between the meso and macro levels, between the supply of, and demand for, training in the VET system and between the supply of, and demand for, skills and competences in the labour market (Figure 1).

Networks help maintain direct but informal links between the different players. The good functioning of a network is based more on trust than on financial interests or formal authority.

> Systems are steered by choosing a strategy in keeping with policy choices: distribution of decision-making powers (decentralisation, involvement of the social partners, etc.), changes to the structure of education and curriculum targets and adaptation of teaching and learning processes.
>
> The choice of the steering system has to be based on an analysis of weaknesses and bottlenecks so that appropriate solutions can then be found.

Figure 1: Stylised coordination actors and tasks

	VET systems		Labour market	
	Demand for education/training	Supply of education/training	Supply of competences	Demand for qualifications and competences
	Legislation, political parties			
	Actors in education/training		Actors in the labour market	
Macro level (national, regional, local)	Students'/parents' organisations	Administration Teachers'/trainers' organisations	Workers' organisations	Employers' organisations
Meso level (organisational)	Students'/parents' representatives	Education/training providers	Workers' representatives	Enterprises
Micro level (individual)	Individual households	Teachers, trainers, etc.	Individual employees	Individual employers

Source: Lassnigg, 2000. Steering, networking, and profiles of professionals in vocational educational and training. *In:* Descy P., Tessaring M., eds., *Training in Europe*, Vol. 1.

2. The financing of training[1]

Finance for *initial vocational education and training* (IVT) comes chiefly from the State (including regional authorities), with the exception of apprenticeship, which receives substantial financing from enterprises. In many countries the IVT budget is increasing in real terms, though unit costs are in some cases decreasing.

Despite various innovations, the financing of IVT continues to be largely input-based.[2] In an attempt, however, to reduce costs, criteria are being refined and more complex allocation criteria are being applied.

With the exception of the input-based model, which is the most conventional and most widespread, all financing models (output-related financing, training vouchers, etc.) try, with varying degrees of success, to regulate service provision and to optimise certain factors (efficiency, effectiveness, quality and equity). These aims are expected to become more important: IVT budgets are increasingly tight as a result of increases in other types of public expenditure, despite the fact that costs have levelled off.

The introduction of strategies of lifelong learning is enhancing the role of *continuing vocational training* (CVT). CVT budgets have increased in most countries (Table 1).

Enterprises bear most of the direct costs of CVT. However, public authorities would like private investment (by both enterprises and individuals) to increase even further.

CVT financing mechanisms depend on the preferred type of steering: state regulation, regulation through agreements between the social partners or market regulation. These three types of mechanism form a continuum. All three are combined to different degrees in the countries examined; however, one or the other tends to predominate and to influence the way in which finance is allocated.

It is necessary to introduce mechanisms to ensure that continuing training opportunities and resources are equitably distributed between enterprises – especially SMEs – sectors and individuals, while taking care to tie the financing of training to output. Competition between providers should become a more important factor.

The sums channelled into *training for the unemployed* have evolved proportionally to the rate of unemployment and continue to rise everywhere – except the United Kingdom – even where unemployment is levelling off or falling. This type of VET is chiefly State-financed.

Various reforms have been introduced to make training for the unemployed more efficient. They

[1] The conclusions drawn in this chapter are based on an analysis of VET financing systems in Austria, Denmark, France, Finland, the Netherlands, Sweden, the United Kingdom, Spain and Germany (Cedefop project).

[2] Payment of a lump sum, calculated differently in each country and taking certain variables into consideration: registration and participation, duration and nature of the programme.

Table 1: Changes in CVT financing levels

Country	Period (1st year = baseline 100)	Comparative financing level (1996-97)		
		Public expenditure	Enterprise expenditure	Individual/ household expenditure
Austria	1986-97	188	-	-
Denmark	1985-96	263	162	-
England	1986/7-96/7	261	-	-
France	1987-96	174	187	206
Finland (a)	1986-96	-	143	700
Spain (b)	1995-96	-	142	-
Netherlands	1986-96	-	161	110

(a) Unlike other countries, Finland indexed all pre-1996 data to 1996 level.

(b) Financing amounts based on the training levies collected from employers and employees, not including EU contributions.

Source: Elson-Rogers S., Westphalen S-Å., 2000. *Financing training in the European Union.* Working paper. Cedefop. Thessaloniki.

can be grouped into three main categories: decentralisation to regional agencies and employment agencies; more substantial government intervention as part of enhanced concerted action with regional and local players; and a tendency towards the privatisation of services.

To sum up, governments are trying to introduce measures that will make training more efficient with a view to containing VET costs. Such measures include decentralising regulation and financing and introducing new resource allocation methods, based on more precise measurements of both inputs and outputs. In some cases, these measures are being accompanied by greater autonomy for training institutions as well as greater competition between providers.

Some innovations in the domain of financing concern the mechanisms of distribution of resources, e.g. output-related funding and training vouchers.

Output-related funding is an innovative approach which makes the allocation of all or part of resources to institutions subject to the achievement of various performance criteria rather than just input criteria (registration and participation, length and nature of programmes).

Output-related funding helps providers become more efficient by encouraging them to improve their policies and training services and to optimise the uses to which their revenue is put. Policy-makers can also use output-related funding as a steering mechanism to achieve certain key objectives.

Despite its potential advantages in terms of steering and efficiency, output-relating funding may have negative side effects. It may cause creaming off of top students, distortion of the supply towards programmes with a high success rate, oversimplification of content, increased evaluation and follow-up costs. It may also lower assessment standards in order to boost success rates, and concentrate excessively on short-term results.

Training vouchers make it possible to finance training demand rather than training supply: recipients can redeem vouchers in the education and training institution of their choice.

State-financed training vouchers have certain priority objectives, such as: to stimulate the demand for training by encouraging people to enter training while allowing consumer choice; to improve access to private services; to ensure better quality (since people are aware of the value of the investment they are making).

Training vouchers nevertheless require a highly flexible system (organised for instance in the form of training modules), as well as guidance services in order to help individuals define appropriate training paths. Training vouchers may, however, also cause dead-weight effects and high administrative costs.

Innovations in the financing of training are still limited in extent, and available data are very incomplete; it is difficult, therefore, to assess their effectiveness and impact. The existence of more accurate data at both national and international level and a more systematic exploration of the impact of new financing mechanisms would make it possible appropriately to monitor VET expenditure and to evaluate innovations and institutional reforms. The quest for efficiency and effectiveness also has to be underpinned by more reliable measurements of the cost-benefit ratio of training.

3. The standing of VET in comparison with general education

The attractiveness of vocational training depends to a large extent on its social standing and the opportunities that it offers on the labour market in terms of employment, pay, career prospects and actual job content. The standing of VET varies in different countries.

- In countries where the educational system is closely linked to the labour market (Germany, Austria, Denmark, the Netherlands, the Czech Republic, Hungary) increasing the prestige of VET requires two things: on the one hand, improving the higher-level career prospects of holders of general or vocational secondary certificates; on the other, facilitating access to higher education for holders of vocational training diplomas.

- In countries where links between the education system and the labour market are limited (Australia, Japan, Canada, United States), links between the two systems need to be strengthened in order to step up the involvement of employers in education and training: e.g. by creating school-enterprise partnerships, or systems of placement during training.

- In systems where links between the education system and the labour market vary in different pathways (England, Estonia, Finland, France, Greece, Norway, Portugal, Scotland, Spain, and Sweden), upper secondary education needs to be provided with a coherent structure.

An analysis conducted in a number of countries (Austria, England, Finland, France, Norway, Scotland, Belgium, Estonia, Greece, Hungary and Spain) helped to identify four strategies for the reform of upper secondary education systems (Table 2).

Table 2: Strategies of reform of VET in upper secondary education with the aim of increasing its standing compared to general education

Vocational enhancement	Insists on the distinct nature of VET, proposes specific curricula and ensures a link between employers and training providers (A, E, HU, EE)
Mutual enrichment	Aims at bringing closer all types of school, in encouraging their cooperation but still preserving their distinctive character (FIN, N)
Linkages	Implementation of a common structure of qualification, certification and recognition allowing for placing VET and general education on a theoretical equality level (Eng, F)
Unification	VET and general education are unified in one system of secondary education, all young people follow a common core of study (Sco, S)

Source: Lasonen J., Manning S., 2000. How to improve the standing of vocational compared to general education. A collaborative investigation of strategies and qualifications across Europe. *In:* Descy P., Tessaring M., eds. *Training in Europe*, Vol. 1.

The strategy of *vocational enhancement* aims at promoting the separate nature of VET, in which specific curricula are offered and links created between employers and training providers (Austria, Spain, Hungary, and Estonia).

Mutual enrichment aims to forge closer links between all types of schools by encouraging them to cooperate while preserving their separate nature (Finland, Norway).

A *linkage* strategy involves the introduction of a common qualification, certification and recognition structure enabling VET and general education to be placed on a footing which is in theory equal (England, France).

In the *unification* strategy, general and vocational education channels are merged into a single upper secondary system. All students therefore follow a common core of teaching. This system ensures more equitable prospects of further study (Scotland, Sweden).

All reform programmes may draw elements from different strategies and the directions taken by national policy may change over time. Neverthe-

less all reforms have one point in common: they respond to, or anticipate, trends in the labour market and the organisation of work requiring qualitative changes in knowledge and skills. The purpose of reforms is therefore to strengthen the links between the labour market and VET by making VET more responsive.

Dual qualifications are a further aspect of reforms. They take the form of qualifications that can be used to enter both skilled employment and higher education, especially university education. In all the countries in which they exist, dual qualifications are taught within school-based full-time education.

Dual qualifications are more effective in promoting the social standing of VET than traditional pathways: they link the acquisition of competences to personal development, facilitate mobility both in the education system and on the labour market and make transitions between education and employment easier. This success is accompanied, however, by fairly substantial creaming off of the top students. Dual qualifications therefore have to be an integral part of a flexible and transparent education system: it must be possible to gain access to these qualifications from different vocational and general channels; they must provide access to further study in higher education.

> Whatever the strategy adopted, it is difficult to change the image of vocational training systems which in many European countries accommodate pupils who have failed in general education. Substantial progress has, however, been made and VET is now being repositioned within education systems and with respect to the labour market.

4. Certification systems, assessment and recognition of skills

Our certification systems are changing. The ability of conventional diplomas to reflect an individual's competence is being called into question. New certification models are appearing, in particular systems for validating non-formal learning.

In a labour market whose main feature is growing mobility, 'credentials' take on increasing intrinsic importance. At the same time, a glut of diplomas is causing the demand for qualifications to rise even further.

At present, certification is becoming a component of training in its own right, and increasingly independent from training (what is termed '*autonomisation*'). By looking for methods that are better able to measure people's competences, the stress is placed more on people's ability to mobilise their competences and less on the way in which these competences have been acquired. This approach is leading to new forms of recognition (especially for non-formal learning).

Introducing a strategy of lifelong learning makes it necessary to take account of alternative methods by which competences can be acquired and to develop links between the various stages of learning at different times of life.

If the transparency of the skills certified and their relevance to the working world are factors of flexibility, their large-scale legitimacy requires the acceptance of standards. A balance therefore has to be sought between a degree of precision through which an individual's particular skills can be readily identified and a wide enough degree of generality to enable these skills to be recognised in the broadest possible spectrum.

New certification models currently being proposed valorise alternative ways of acquiring knowledge, i.e. learning in working situations, during leisure time or in private life. Competences are assessed regardless of the way in which they have been acquired.

The European countries can be grouped into five clusters depending on the importance they attach to non-formal learning, the institutional and/or methodological initiatives they have taken and the experiments they have launched.

(a) The first cluster includes *Germany* and *Austria*. The attitude of these two countries towards non-formal learning can be described as cautious. There is no consensus among the various players in training that new assessment methods are needed. Experimental projects have, however, been launched.

(b) The second cluster includes the Mediterranean countries: *Greece, Italy, Spain* and *Portugal*. These countries do not have such a strong tradition of VET; as a result, non-formal learning has become the dominant means by which skills are reproduced and renewed. A range of methodological and institutional responses has now been introduced. However, though both the public sector and the private sector have stressed the value of recognising non-formal learning, not enough practical steps have been taken yet.

(c) In the Nordic countries (*Finland, Norway, Sweden* and *Denmark*), there are two sub-groups. In Finland and Norway, non-formal learning is at the forefront of discussions of education and training and is giving rise to far-reaching experiments and institutional reforms. In the other two countries (Sweden and Denmark), interest in this issue has up to now been limited.

(d) The fourth cluster reflects the influence of National Vocational Qualifications (NVQs) in mutual learning between countries. It includes the *United Kingdom, Ireland* and *the Netherlands*. In these Member States, the importance of learning outside formal systems is recognised almost unanimously. Other countries are also trying to adopt a system based on the NVQ model (for instance some of the Spanish autonomous communities).

(e) The criterion for the final cluster, including *Belgium* and *France*, is more geographical. France has played a pioneering role in identifying, assessing and recognising non-formal competences. But though the country has the longest and most extensive experience in this field, the social recognition accorded to such learning is still limited. Belgium is still at an early stage of development and has not yet decided on a clear-cut strategy.

Other initiatives at sectoral or branch level are helping to make this issue more complex and wide-ranging.

The European Union (*White Paper on teaching and learning, 1995*, and programmes) has helped to identify the issues more clearly and has supported processes launched at national level. Intensive activity at national level is, however, motivated more by the practical challenges raised by the creation of links between formal and non-formal learning than by a desire to create systems that are transparent and harmonised at European level.

The various measures that have been introduced on a relatively large scale show that non-formal learning is still being treated as a sub-category of formal learning. The specific nature of this type of learning, leading to specific competences, has not as yet been recognised. This is partly due to the fact that formal qualifications continue to underpin industrial relations in terms of job level attribution, pay scales and collective agreements.

While the reliability and validity of non-formal learning are ensured by technical and instrumental criteria, legality and legitimacy must be ensured on a normative basis. Even perfect methods are of no value unless they are underpinned by an appropriate institutional and political framework. Though institutional structures cannot provide the whole answer, this dimension should certainly not be disregarded.

5. VET professionals: changing roles, professionalisation and steering of systems

Changes in the roles of VET professionals are being shaped by three new aspects of the training landscape: the development of learning organisations; the emphasis that is being placed on competences and non-formal learning; and the impact of the new information and communication technologies (ICTs).

The challenges that are facing VET seem to point to the need for greater professionalisation among the players involved in training. The extent to which this professionalisation can have an impact on the steering of VET systems and the forging of closer links with the labour market also needs to be studied.

Stepping up educational qualifications is the traditional approach to the professionalisation of the jobs of teachers and trainers, especially to improve the role of instruction/facilitation. The outcome of this approach is progressively to align the function of VET teachers with that of teachers in general pathways.

The widespread dissemination of educational knowledge must be accompanied by the introduction of continuing training programmes, enabling professionals to prepare for new functions (administration, planning, research, etc.).

The very fragmented nature of the various groups of professionals is accompanied by increasing convergence of their functions. Formal integration of the various groups may well prove difficult to achieve. However, alternative solutions can be explored: developing common elements in IVT (level, method and content) and new functions (research, links between IVT and human resource development – HRD); stepping up cooperation with the working world and the social partners; and introducing learner-oriented programmes and rich learning environments, in particular in CVT.

The range of tasks and functions of HRD may provide a basis for the professionalisation of the various players involved in training. It could be envisaged to diversify the role of the groups of professionals distributed throughout the various organisational spheres of training (education and workplace) in order to enrich their functions as educators by those of HRD managers.

Part two
Lifelong learning and competences: challenges and reforms

In this section, lifelong learning is addressed from a pedagogic viewpoint. The various elements of this strategy are analysed: the competences to be developed, the teaching and methods to be put in place, the reforms to be implemented in education and training systems to ensure that courses are individualised and flexible. Also analysed are new forms of in-company competence acquisition in connection with the restructuring into learning organisations .

1. Lifelong learning: from creation of a concept to a new educational paradigm

In a society where globalisation, technical progress and communication technologies underline the essential value of human capital, the advent of the concept of lifelong learning goes hand in hand with growing awareness of the importance of the processes of acquiring and updating knowledge and competences.

The concept of lifelong learning emerged in the 1970s. At that time it focused on a vision of systematic and institutionalised education and training. The value of competences acquired outside formal institutions received little recognition (except in certain countries, see for example the German dual system). Practitioners knew that it was not enough simply to extend traditional education throughout life, and that new methods would be needed; however, there was a greater emphasis on the content of learning than on the processes or the learner.

Since then, the labour market and education systems have been affected by profound changes, associated in particular with socio-economic change, technological advances and the demographic trend. This resulted, amongst other things, in considerably increased participation rates of adults in training (Figure 2).

These changes have shown the importance of employability, which refers to the need to develop and maintain workers' competences, equipping them with the knowledge and capacities necessary to stay in employment throughout their working lives. To this end, individuals need to be empowered to ensure their own employability by becoming lifelong 'self-directed learners'. From the point of view of employability, lifelong learning appears to be a necessity and a right for all. The State and other institutions responsible for education and training should therefore provide appropriate learning conditions and environments.

Setting out the central elements of the new concept of lifelong learning helps in identifying the challenges facing States, education systems, enterprises and individuals.

(a) *Initial education and training must ensure that a minimum learning platform is guaranteed.* Initial training appears to be a tool preparing individuals to acquire an adequate level of employability and adaptability, by equipping them with the necessary skills and competences to gear themselves and adapt, throughout their lives, to changes in occupations and working environments.

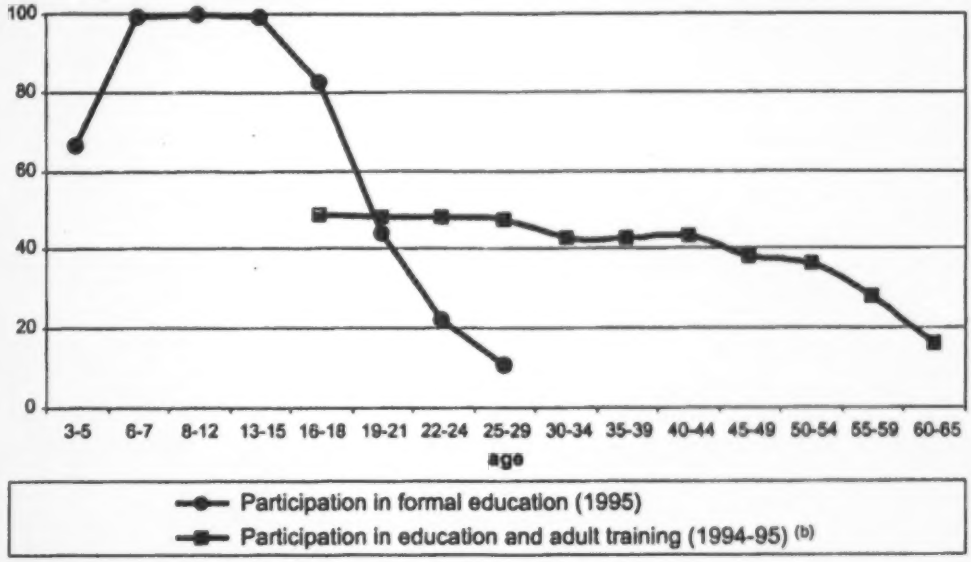
The initial stage of education and training is crucial, since it represents a unique investment in the formation of competences on which individuals can rely throughout their lives. Young people must be provided with at least a 'minimum education and training platform', composed of basic skills and key competences on which they can base and build up their later learning.

(b) *Enterprises and individuals play a key part in the strategy of lifelong learning.* They must invest into developing their potential, supported by public policies designed to create a favourable economic and social climate.

Increased investment in training depends on private initiative, including that of enterprises. Governments should therefore endeavour to encourage enterprises and individuals to invest in training.

Because of changes in the structure of trade systems and of work organisation and because competition is becoming keener – phenomena that are intensified by the rapid spread of new technologies – enterprises should be aware that their survival and ability to compete depend on their

Figure 2: Participation in lifelong education and training, selected countries, 1994-95, % (a)



(a) % of each group participating in formal education (from 3-29 years), and participation in education and adult training (16-65 years); non-weighted average of 9 countries (B, CA, IRL, NL, NZ, S, CH, UK, US).

(b) Except full-time students younger than 24 years.

Source: OECD, 1998. *Education policy analysis.* Paris: OECD (CERI).

constantly updating the competences of their employees through training.

(c) The *identification, evaluation and recognition of non-formal learning* is a crucial stage in the implementation of a strategy of lifelong learning and training. It is becoming important to link together different forms of learning in all areas of life (lifewide learning) at different points in life (lifelong learning).

(d) The change from instructionist education to a constructivist approach, in which the individual is active, and content is contextualised and based on problem-solving, results in a complete redefinition of the functions of *teachers* and *trainers*, both in companies and in training establishments and schools. The didactic situation is less easily foreseeable and incorporates practical dimensions to a greater extent, or indeed wholly. Previously the teacher/trainer taught, demonstrated, explained. Now, in the new forms of learning, his role is to advice and structure the processes.

(e) Hence specific measures must address various *disadvantaged groups*, in order to prevent any increase in inequalities as regards access to education. These groups are, for example:

- young people who leave education without reaching upper secondary level;
- low-skilled workers;
- older workers;
- the unemployed or individuals at risk of unemployment;
- immigrants and ethnic minorities.

(f) Used as a didactic tool, *information and communication technologies (ICTs)* offer individuals a significant degree of flexibility (choice of subjects, learning times and methods, particularly with the Internet). That is one of the reasons why *e*-learning is now one of the European Commission's prime aims. However, ICTs may lead to new forms of exclusion by penalising individuals with restricted access to these tools or less familiar with these technologies (especially individuals who have special educational needs and/or who come from underprivileged social backgrounds).

Institutional systems must be reformed so as to create or strengthen links between the various elements of education systems and between learning and work (Table 3):

- horizontal links within the education system, establishing bridges between different education and training routes to facilitate individual mobility;
- vertical links between initial and continuing education/training systems, to ensure ease of transition between the two moments of competences acquisition;
- links between education policies and labour market policies, with a view to increasing cooperation among the various players (e.g. education and employment ministers, the social partners);
- links between education system and production system, to facilitate the transition between the two, to encourage training systems to be responsive, to increase the awareness of enterprises on the long term benefits of training and to help individuals to familiarise themselves with the world of work.

Ten years ago, the various elements of lifelong learning were still being studied in isolation. Most countries now seem to opt for a *more holistic approach* to this concept, designed to bring together both initial and continuing education and training and formal and non-formal learning within a cohesive system.

Table 3: Reforms of institutional settings for the implementation of a lifelong learning strategy

Type of links to be developed	Objective pursued
Horizontal links within the education system	Facilitate mobility of individual through the creation of pathways between the different tracks of education and training
Vertical links between initial and continuing education and training	Facilitate the transition between the different moments of competences acquisition
Links between education and labour market policies	Enhance the cooperation between the different actors (e.g. ministry of education and labour, social partners) and the coherence of policies and measures implemented
Links between education and production systems	Facilitate the transition between the two, stimulate the responsiveness of education systems, raise the awareness of enterprises on long-term benefits of training and help young people to familiarise with the world of work

Source: Authors.

2. Competences, learning processes and didactic innovations for new occupational profiles

Job content is changing at an increasing rate, mainly because of two factors:

(a) the introduction of new technologies, which put the emphasis on intellectual competences rather than action-based skills;

(b) the expansion of new organisational paradigms, which establish new requirements as regards variety, flexibility and quality in occupational practice.

The labour market is exhibiting contradictory demands: employers are seeking individuals who will be both highly adaptable (i.e. generalists) and immediately operational (i.e. specialists).

Most people are likely to need to undergo training and to change jobs in the course of their working life; hence VET must equip them with a broad basis of technical, methodological, organisational, communication and learning competences. VET should also provide specific skills to facilitate the transition between the education system and employment. To tackle this antagonism a redefinition of vocational education would appear necessary, and the concept of 'qualification' should be replaced by the broader concept of 'competence' (Table 4).

Today, 'competence' has become a general-purpose term. It is used in various scientific disciplines, but often with different connotations. In the context of employment, it is tending to supplant formal qualifications. In education and training, its acquisition is becoming the ultimate objective. Competence is coming to the fore in a context of socio-economic crisis and transformation of work organisation, which in itself justifies the transition to a new management model. An attempt is even being made to define the competences individuals must have in order to take their place in our society.

In the field of vocational training and work analysis, skill has traditionally been regarded as something highly specific, associated with a job. Technical and social developments have stimulated a quest for transverse competences, in addition to specialised skills.

In Europe, various models have been proposed to VET systems for adaptation of their content and curricula. Two main trends can be identified:

(a) the approach promoting basic and generic skills;

Table 4: Changes in competences deriving from new technologies and new forms of work organisation

Factors of competence	Old content	New content
Responsibility	Based on behaviour, such as effort and discipline	Based on taking the initiative
Expertise	Related to experience	Cognitive – identifying and solving problems
Interdependence	Sequential; hierarchic	Systemic; group work
Education and training	Acquired once and for all	Continuous
Learning	Passive – being trained	Responsible for own learning – self-learning, lifelong learning

Source: Green A., Wolf A., Leney T., 1999. *Convergence and divergence in European education and training systems.* Institute of Education. University of London: Bedford Way Papers, p. 128, adapted by the European Commission, Eurotecnet programme.

(b) the approach promoting transferable (key/core) competences and broad professional competences.

The approach promoting *basic and generic skills* is characteristic of the debate in English-speaking countries, but it is also seen in certain other countries, although to a less significant extent (DK, D, NL).

The skills whose acquisition is promoted in this approach are the general elementary and/or cognitive competences required for a whole series of jobs, indeed all jobs: mathematics, reading, writing, problem-solving, social, communication and interpersonal competences. They are 'entry skills'.

The approach promoting *transferable* (key/core) and *broad professional competences* (dominating for example in Germany, Austria, and Denmark) is based on a collection of competences transcending divisions of labour and traditional occupational profiles. The competences cited are social and communication competences, and strategic efficiency, in particular problem-solving competences, organisational competences and leadership.

Definitions of skill/competence

Skill: the relevant knowledge and experience needed to perform a specific task or job and/or the product of education, training and experience which, together with relevant know-how, is characteristic of technical knowledge.

Competence: the proven and individual capacity to use know-how, skills, qualifications or knowledge in order to meet both familiar and evolving occupational situations and requirements.

Generic skills: the skills that support lifelong learning, including not only literacy and numeracy (i.e. basic skills), but also communication skills, problem-solving skills, teamworking skills, decision-making skills, creative thinking, computer skills and continuous learning skills.

Transferable competences: the competences individuals have which are also relevant to jobs and occupations others than the ones they currently have or have recently had.

Key/core competences: the sets of skills which are complementary to basic and generic skills and which enable individuals

- to acquire new qualifications more easily;
- to adapt to changing technological or organisational contexts; and/or
- to achieve mobility on the labour market, including by means of career development.

Sources: Bjørnåvold J., Tissot P., 2000. *Glossary on identification, assessment and validation of qualifications and competences; transparency and transferability of qualifications.* Working document. Cedefop, Thessaloniki.

European Training Foundation, 1998b. *Glossary of labour market terms and standard and curriculum development terms.* Turin: ETF [online]. Available from the Internet: http://www.etf.it/etfweb.nsf/ pages/downloadgen.

There is no fundamental difference between these competences and those listed by supporters of the development of generic skills. It is because they are regarded here as dependent on a context or a range of situations that the didactics for their acquisition will be different.

Problems of occupational practice do not appear in isolation, but in bundles specific to each occupational group; these can be called *occupational core problems*. When they arise, the worker must knowingly mobilise a collection of knowledge and competences, in order to react appropriately and in good time. These problems are determinants vis-à-vis the work and efficiency of particular groups of skilled workers. In order to become experienced skilled workers, beginners must prove their ability to deal with these prob-

lems efficiently. The ability an individual demonstrates to resolve them determines his level of expertise.

During the learning process, learners can use these problems to acquire the key elements of the skills and know-how required in their occupation, but also to develop more general competences, namely problem-solving and meta-cognitive competences. The learner must face up to elements of complexity, contradiction and uncertainty which help to develop transferable competences.

Researchers and VET teachers seem to be divided not so much on the subject of the kind of skills/competences that enable individuals to adapt, but rather on the methods of acquiring these skills/competences and on their application in appropriate occupational situations.

Some researchers believe that basic skills (reading, writing, mathematics) and generic skills (problem-solving, communication, learning to learn) must be imparted. Others, while acknowledging the value of these competences, argue that *competences are context-dependent*, and cannot be developed outside it.

Teaching innovations based on each of these two channels have been proposed. However, they all focus on autonomous learning and competences development via problem-solving, and are based on more customised and active teaching and pedagogy, as opposed to traditional teaching (traditional frontal learning or simple copying of behaviour in the workplace).

3. Individualisation and differentiation of VET pathways

In order to ensure varied, high-quality learning and implementation of a strategy of lifelong learning, VET must, inter alia, adopt new flexible methods and facilitate increased individualisation. In this chapter national examples are given, supplemented by proposals for further reforms.

Several paths have been explored in Europe in the quest to achieve flexibility and individualisation:

- increased *cohesion* between initial and continuing education and training;
- increased *modularisation* of training pathways (facilitating a more flexible approach to competences);
- creation of programmes *combining* vocational and general qualifications (in particular, dual qualifications);
- *expansion* of the choices offered by training programmes (facilitating the development of customised courses of personal and vocational development).

These reforms are aimed at increasing the flexibility and differentiation of VET; they are also designed to improve its image and strengthen its position in relation to general education (see above).

In the *United Kingdom and the Netherlands*, it is believed that customised lifelong learning necessitates gradual implementation of a modular system, which should also ensure that VET is more responsive to industrial change and creates bridges between VET and general education and between VET in a school environment and in the workplace (alternance training).

In *France*, interchangeability of general and vocational education has been formally implemented. Flexibility has been increased via validation of learning and vocational experience, which enables credits to be built up. For example, the vocational baccalaureate (Bac pro) has been put in place, a dual qualification stream.

Germany has chosen to implement a policy of internal differentiation, to promote dynamism and flexibility within programmes. A second axis of reform is designed to achieve greater customisation of vocational qualifications and to ensure a smoother transition between initial and continuing vocational training.

In *Denmark*, all young people, including those participating in VET, are given a basis of general education, facilitating increased mobility between pathways. A modular system has also been put in place. Modularisation also promotes adaptation of curricula to meet the needs of particular target groups, thanks to the customised combination of learning units.

Lifelong learning is furthered by putting in place partial or full qualifications that are interchangeable, enabling individuals to move between general education, initial and continuing vocational training, and higher education, within a system which will no longer be linear (with one stage following another), but will support transfers between different places and times of competences acquisition, in an approach favouring compe-

tences acquisition rather than an accumulation of qualifications.

VET will be made more attractive by the opportunity to obtain recognised supplementary qualifications through continuing training, and by the provision of continuing training in higher education for VET qualifications.

Consistent expansion of continuing training options in the workplace is also required. New forms of work organisation appear to offer more opportunities for learning than did traditional forms of division of labour.

4. Learning in enterprise

New models of work organisation are improving the opportunities for professionalisation and learning. However, teaching incorporated into the modern work process is very different from pedagogically organised teaching. In the most audacious scenarios, new forms of work are equivalent to new forms of learning.

Training associated with work must not be restricted to experimentation or on-the-job training. Complete vocational competence cannot be acquired solely through informal or non-formal learning, which constitutes a limited situation from the cognitive point of view, since it does not provide for any reflexive return on the activity. Forms of deliberate learning must be added, to take the process beyond the level of training characterised solely by technical or economic objectives, and to encourage reflexiveness and personal development on the part of the learner (Table 5).

The forms of organisation and learning characteristic of modern industrial work processes can be divided into two main categories:

(a) learning-organisation-type forms, in which deliberate learning and informal learning are systematically combined, and which go beyond the immediate necessities of the job;

(b) forms of work organisation in which competences are acquired informally and through experience, and remain limited to the needs dictated by the work situation.

Forms of workplace learning which can be regarded as innovative go beyond informal learning in the way in which they systematically combine learning and work.

Table 5: Types of experiential learning

Experiential learning		
Informal learning involves no organisation or formal framework. Its result becomes apparent without being sought.		*Deliberate learning* is learning intended to achieve specific results.
Experience-based learning involves a process of reflection	*Learning by implication* takes place without reflection or unconsciously	

Source: Dehnbostel P., Dybowski G., 2000. Company-based learning in the context of new forms of learning and differentiated training paths. *In:* Descy P., Tessaring M., eds. *Training in Europe*, Vol. 1, adapted by the authors.

A learning organisation is an enterprise which mobilises its entire workforce in increasing organisational and individual efficiency, through continuous deliberation on the way in which strategic and everyday tasks are carried out and by creating a learning conducive environment. Thus the work content becomes the learning content. Together, the two become elements of a spiral of continuous improvement.

Implementation of forms of learning incorporated into the work process and of self-directed learning also fulfils economic objectives; it is associated with restructuring of enterprise organisation. These initiatives lead to the creation of new training prospects and thus fulfil both economic and educational objectives by contributing to:

- the relevance of contents;
- increased prospects of personal development and individual autonomy;
- optimisation of productivity and performance;
- understanding of organisational reforms by all those involved;
- the acquisition of competences appropriate to future labour market requirements.

Learning within the modern work process offers a series of benefits as regards guidance and motivation; it also ensures a direct link between the acquisition of knowledge and its practical implementation. However, this form of organisation has not inconsiderable implications for the functions and tasks of those responsible for training and development of human resources, and for any worker who acts as a trainer at some point.

Recognition of the constructive nature of learning and strengthening of its links with the work process modify the trainer's conditions and methods of intervention. Within the learning organisation, where workplace and learning merge together, his function moves in the direction of coordination. Within this framework, in addition to his traditional functions the trainer acts as foreman, spokesperson, project manager, quality assessor, etc., a process also broached in the context of the new roles of VET professionals above.

Part three
Training and employment in a company perspective

The third Part of the report focuses on companies and their role in training and employment. After an analysis of the possible impacts of globalisation on work organisation and skills, the structures and the functioning of internal and occupational labour markets and their effects on skill acquisition and utilisation are discussed. Research into SMEs, self-employment and entrepreneurship, and the implications for growth, job creation and enrichment of skills, are presented thereafter. Approaches to develop and measure human resources at company level, and the potential of enterprise surveys as a complement to labour force surveys, are further issues discussed in this Part.

1. Skill needs in a global economy

There is no clear or simple relationship between 'globalisation', the division of labour and company training needs. Changes in the division of labour are increasingly attributed to the process of globalisation which is expected to place new demands for skills, competences and work attitudes on employees.

Decreasing site-specificity and temporal constraints on the production of goods and services establish new competition criteria for globalised markets. In order to meet these criteria, firms reorganise production and work processes and workers have to face new skill requirements. However, empirical evidence on new production concepts is not always clear but shows a broad range of organisational choice between more traditional, 'neo-Tayloristic' and new organisational approaches.

Production intelligence – a combination of theoretical, experiential, systemic, digital and work process knowledge – as well as international, managerial and social competences will clearly gain in importance. However, it would be an illusion to believe that every job involves an equally high degree of these new competences. Globalisation in combination with new ICTs sometimes also results in work that reduces skill requirements to a minimum. Furthermore, it is hard to believe that every worker is able to meet new and ever-increasing job requirements.

Thus, a general trend towards a 'rehabilitation' of work is not always visible. Instead, and reinforced by globalisation, there is also a tendency of *polarisation* with skill-intensive jobs on the one hand and less information and knowledge-intensive jobs on the other.

This implies a major challenge for VET systems. Training should contribute to avoiding the exclusion of those falling out of the upper and intermediate segments of skilled personnel. Within the vocational training system, ICT-applications, and the resulting qualification needs (e.g. '*e*-learning'), should receive major attention. Furthermore, the ICT-sector itself faces quantitative as well as qualitative skill shortages. Vocational training should contribute to reducing at least the qualitative ones.

The widespread use of modern ICTs not only creates additional qualifications and training needs, but has also impacts on the *delivery* of training, e.g. through the provision of open learning centres, distant and self-directed learning and the delivery of learning to people who are unable to attend classes regularly. In this sense, 'globalisation' could be positively used to enhance and complement the skills needed in a global society (Table 6).

2. Internal, external and occupational labour markets

Debates on the contribution of training to economic growth and employment touch upon public policies and the roles of enterprises and individuals concerning the creation and accumulation of human capital. Questions focus on the structure, functioning and mobility of internal, external and occupational labour markets as well as their implications for skill acquisition and utilisation.

Table 6: Knowledge and skills needed in the global economy	
Knowledge and skills	**Underlying cause**
Knowledge	
Theoretical knowledge	Work as a process of problem-solving
Technical (digital) knowledge	Introduction of modern ICTs
Practical, work process knowledge	Increased uncertainty, risk situations caused by technical integration
Skills and competences	
Professional skills, multiskilling	Integration of tasks, de-specialisation, group work
International skills	Globalisation of markets and production
Social skills	Direct interaction within and between work groups, customisation, direct interaction with suppliers
Management skills	Flat hierarchies, decentralisation, increased information exchange
Work orientations	
Quality consciousness, reliability	Quality and time as key aspects of global competition
Creativity, entrepreneurship	Innovativeness as key element of global competition
Leadership	Coordination of autonomous work groups
New work virtues	Commitment, trust, industrial citizenship

Source: Schienstock G. *et al.*, 1999. *Information society, work and the generation of new forms of social exclusion (Sowing): Literature review.* Tampere: University of Tampere, Work Research Centre, p. 83.

Research into internal and occupational labour markets indicates that the choice of a societal model, and the resulting *wage-labour nexus*, differs across European countries. Economic approaches based on neo-classical and human capital theory are disputed, as are sociological ones based on dual labour market and segmentation theories.

All these models are only partly able to explain the wage-labour and, in consequence, the *skill-labour nexus*, i.e. the role of different actors (individuals, employers, social partners, training institutions, State) in linking the labour market and education/training system.

Up to now, empirical evidence of the interplay between all types of labour markets – external, internal and occupational – and their links to education, training and skills have been rather scarce. Longitudinal analyses, combining both individuals and firms, are at an early stage. Such analyses should include institutional characteristics and the influence of other actors on the modalities of in-company training and deployment (Table 7).

They should also be able to answer the question of whether, and by which means, disadvantages in education, training and early work career can be compensated for by continuing training or targeted programmes in later working life.

Societal models and approaches up to now have tended to focus on the links between training, occupational relations and personnel management. Most of them are content with a description of structural characteristics, assuming a stable world.

However, the relationships between training, mobility and wages/career are varying: they differ by type of labour markets, by time, country and region. A similar situation applies with regard to policies concerning the competitiveness of firms, internal and external flexibility, the battle against social exclusion and new combinations of training and work.

> 'Shocks' such as the opening of Europe, globalisation, educational expansion, changing work organisations etc. should stimulate dynamic models – thus changing the view from a mere description of societal spaces to an analysis of the modalities of transformation (or perseverance).

Table 7: Characteristics of occupational and internal labour markets		
Function	**Occupational labour market**	**Internal labour market**
Training	apprenticeship	experience acquired within the enterprise
Nature of training in the course of working life	standardised according to the principles of the occupation	not standardised, specific to the enterprise concerned
Transferability of qualification	within the scale of the occupation	within the enterprise
Tenure	no recognised role in terms of acquisition of skills or of earnings	strong influence of skill acquisition and earnings
Level of qualification when changing the enterprise	maintenance of the qualification level	downgrading
Control of the work content	based on the defence of the occupation	based on a system of rules which apply to all workers in the enterprise (e.g. classification systems)
Organisation of workers	based on occupational affiliation	based on the enterprise or sector
Principle object of flexibility negotiations	demarcation rules between jobs	general rules applying to the whole workforce

Sources: Eyraud J.-F., Marsden D., Silvestre J-J., 1990. Marché professionnel et marché interne du travail en Grande-Bretagne et en France. *Revue internationale du travail*, 4, pp. 551-569; Hanchane S., Méhaut P., 2000. Training, mobility and regulation of the wage relationship: specific and transversal forms. *In:* Descy P., Tessaring M., eds. *Training in Europe*, Vol. 2.

Equally, comparative studies based on interdisciplinary approaches and using both quantitative and qualitative information – in particular at the enterprise level – are research topics that need significantly more attention.

3. The role of SMEs in training and employment

Today, small and medium sized enterprises (SMEs) are regarded as the main source of economic development, innovation and creation of employment. Empirical evidence confirms the decisive role of SMEs for growth and employment: 99,8% of all enterprises in Europe have less than 250 employees and SMEs employ the majority of the European workforce (Table 8).

Independent and family businesses still form the majority of small firms, in particular in southern Europe. However, there is a trend towards more dependence (or to interdependencies) on other SMEs or large firms coincident with a shift from the owner-entrepreneur to the manager of a small or medium firm and their different strategies, e.g. in terms of long-term or shorter-term performance. This shift also has an impact on the training, recruitment and employment policies of firms.

Table 8: Enterprises and employment[a] in Europe 1994/96, EU-15, %		
Size (number of employees)	**Enterprises** (1996)	**Employment** (1994)
0-9	93.0	27.5
10-49	5.9	15.3
50-249	0.9	11.1
0-249 (SMEs)	*99.8*	*53.9*
250+	0.2	46.1
Total	100.0	100.0

(a) Without agriculture (note: agriculture accounts for 5.4 % of the total European labour force).

Sources: enterprises: Trouvé P. *et al.*, 2000. The employment and training practices of SMEs. Examination of research in five EU Member States. *In:* Descy P., Tessaring M., eds. *Training in Europe*, Vol. 2, based on ENSR (1997, p. 328, without agriculture and non-market sectors); employment: European Commission, 1998. *Employment in Europe 1998*. Luxembourg: EUR-OP (figure 117, based on 'Enterprises in Europe' and on the Community labour force survey; without agriculture and household services, incl. energy).

Although SME research has a long history in some countries, it was not until the 1980s that economists and sociologists rediscovered SMEs. The decline of mass production, decentralisation, ter-

tiarisation of economies and persistent unemployment emphasised the flexibility of small structures which are expected to improve innovation, competitiveness and responsiveness to changing markets. However, the *specificity* and, at the same time, *diversity* of SMEs – even more in a European context – impedes a coherent analysis of the role of SMEs in training and employment creation.

Research has developed a multiplicity of approaches reflecting different definitions, economic weight and historical development of SMEs in European countries. Until the recent past, with the exception of Italy and Germany, however, SMEs have not been an autonomous object of research.

In contrast, SMEs are of increasing interest to national and transnational *policies*, in terms of modernisation, innovation and development of human resources. The reasons are obvious: the growth of services and business restructuring in large firms; the crisis of large concentrations; and the advantages of small flexible units. Above all, SMEs are seen as 'carriers of hope' in the battle against unemployment and to foster economic dynamism.

In this context, much research work on SMEs has been devoted to manufacturing sectors, but too little to services and international comparisons. Research should focus much more on the key sectors of employment creation, e.g. business and personal services, recreation/tourism, hotels and restaurants, health, education etc. and the skills needed there.

The link between enterprise creation and employment creation is not always evident. Rapid production and employment growth among SMEs is a phenomenon which applies to a relatively small number of 'high-flying' and fast growing small businesses only. Most of these highly performing SMEs are to be found in the services sectors and employ, in particular if they have surpassed the threshold from a micro to a small sized enterprise, an equal proportion of highly skilled workers as larger firms. Micro firms, on the other hand, above average employ workers (in particular women) at lower and medium skill level (Table 9).

SMEs create employment but they also destroy jobs. Schumpeter's *'creative destruction'* with appearance and disappearance of firms and jobs in the market is an essential element of economic dynamism, of contribution to structural change and to the reactivation of labour markets. But fluctuation may also reinforce job precariousness and may prevent workers and firms from an optimal investment in human resources.

Table 9: Level of education of persons employed by sector[a] and size class, EU-15, 1995, %

Education level (ISCED)[b]	Firm size (number of employees)					
	1-10	11-49	50+	1-10	11-49	50+
	All sectors			Services		
	Males					
High	18.1	21.4	27.9	34.5	37.3	39.9
Medium	42.3	47.5	45.2	39.6	38.9	37.7
Low	39.6	31.1	26.9	25.9	23.8	22.4
All levels	100.0	100.0	100.0	100.0	100.0	100.0
	Females					
High	17.2	24.3	24.9	28.0	35.5	35.0
Medium	44.5	44.8	45.1	46.5	39.8	42.1
Low	38.3	30.8	30.0	25.5	24.7	22.9
All levels	100.0	100.0	100.0	100.0	100.0	100.0

(a) Without agriculture.

(b) High: ISCED 5-7; Medium: ISCED 3; Low: ISCED 0-2.

Source: Eurostat (European Commission, 1998. *Enterprises in Europe. Fifth report* - Data 1994-1995. Luxembourg: EUR-OP, p. 105).

Political support of enterprise start-ups faces the problem of targeting the measures. How to identify early the best performing SMEs which create the most jobs? And should policy also focus on *job quality* in terms of stability, durability of jobs and working conditions?

Numerous difficulties arise when trying to measure the specific contribution of SMEs to employment growth – not only because of the ongoing economic transformations but also because the terms 'creation' and 'employment' are themselves blurred.

These problems also concern the appropriate *method* of analysis, e.g. the distinction between stocks and flows, gross and net job creation, and the use of cross section or longitudinal data. Another question to be answered is to what extent job growth is endogenous, i.e. induced by the creation of enterprises and their subsequent development, or to what extent it is exogenous, for example the result of the outsourcing practices of large firms? This also affects the skill needs and different training strategies of SMEs.

In view of the diversity of SMEs and their anchorage in specific environments, research concentrated on the evaluation of impact of *training and employment practices* of SMEs (Figure 3).

Research has shown, for example:

- in initial training, SMEs absorb the majority of young people in Europe, in particular through apprenticeship training. Although some small firms recruit higher skilled young people, the majority of SMEs, however, is characterised by lower skilled and precarious jobs. This is one reason why a substantial number of young people leave small enterprises after training;
- the engagement of SMEs in *continuing vocational training* lags considerably behind that of large firms. CVT provision also depends on the strategic orientation and profile of the owner-manager. In most cases, CVT serves the adaptation of skills to short term demand, and is primarily done on-the-job and informally. However, high-tech or manager-run small firms in particular, increasingly rely on formal CVT measures or on cooperation, networks, external training institutions or on new forms of training supported by ICTs;

With regard to *political measures* to support CVT in small firms, European countries pursue different approaches, ranging from legal obligations of

Figure 3: The role of employers in initial and continuing vocational training

Role of the employer → / in initial vocational training ↓	in continuing vocational training: poor	medium	strong
poor weight	Spain	Belgium	Finland, Sweden
little formalised	Italy, Greece, Portugal		United Kingdom
minority and institutionalised		Ireland, Luxembourg, Netherlands	France
dominant and institutionalised		Germany, Austria	Denmark

Source: Aventur F., Campo C., Möbus M., 1999, *Les facteurs de développement de la formation continue dans l'Europe des quinze*. Céreq BREF, n° 150, février.

firms to laisser-faire approaches towards employers. Other countries have established a series of intermediary regulations within collective agreements or in cooperation with the social partners.

Recruitment and personnel policies in SMEs are often affected by the absence of a longer term personnel planning, by short term recruitment decisions reflecting temporary demand and by informal selection procedures. However, since SMEs train more young people, employ more former unemployed (and mostly older) people and more family members than large firms, they can function as 'transitional labour markets' between training, employment, unemployment and housework.

More research efforts are needed, taking into account regional aspects and the diversification of SMEs which should be reflected by appropriate policy measures.

4. Entrepreneurship and the European employment strategy

Entrepreneurs are commonly seen as 'agents of change and growth'. The conditions for starting-up a business, for its survival, and the contribution of new firms (mostly SMEs) to growth and employment are, however, not always clear.

Most research today emphasises the *'social capital'* of the entrepreneur. In this context four categories of entrepreneurs, with partly different business, employment and training strategies, can be distinguished:

(a) descendants of entrepreneurial milieu;

(b) entrepreneurs by compulsion;

(c) entrepreneurs by adaptation (e.g. because of unemployment or precarious employment);

(d) entrepreneurs by seizing an opportunity.

A large research body exists on the mechanisms of business start-up and the links to the labour market. Increasing unemployment may 'push' people to start a business. A new demand for goods and services may 'pull' the creation of new firms. However, concerning the push factor, little empirical evidence is found. This seems to confirm the importance of pull-driven business creation.

Research has elaborated a complex vision of *enterprise survival* and related employment effects. In general, the survival rate five years after business start-up in Europe and the US ranges between 50% and 60%, with variations by sector, region and country. Rapid growth of a newly-created enterprise is an exception.

The survival process is, however, more complex than often assumed. Closures are not always a sign of 'failure' but often are done because of more favourable alternatives for the founder, and many other closures are made without financial loss. Consequently, the equation of 'closure' and 'failure' is not always meaningful.

The notion of *innovation* is even more unclear. SMEs are, in general, no more innovative than large enterprises. Even among the fast growing SMEs, only certain ones exhibit superior productivity or realise innovative activities. There is no technological determinism, although, in the first period after start-up, a positive relationship can be found between innovation and survival.

In many cases neither technology nor innovation constitute a distinctive advantage. More important determinants are the specific position in the market, and within the value added chain, territorial anchorage, innovative milieus and contacts with universities or research institutes. If new enterprises enter into established markets their survival is difficult and their independence may be threatened.

> Public support today not only includes financial aids and the imparting of human capital, but also attempts to stimulate a spirit of enterprise or an *'entrepreneurial culture'* by lowering labour costs and charges or by removing administrative and fiscal barriers. However, undifferentiated support measures may not solve unequal developments and imbalances in social and geographic terms, and thus may not lead to major job creation.

Research and policy is increasingly interested in *self-employment* as a source of job creation and alternative to dependent work or unemployment. The questions arising here are closely associated with the issues of SMEs and entrepreneurship.

Access to this research field is, however, difficult, given the heterogeneity of self-employment (e.g. agriculture, liberal professions, 'quasi self-employed') and different legal and fiscal definitions of self-employment across countries.

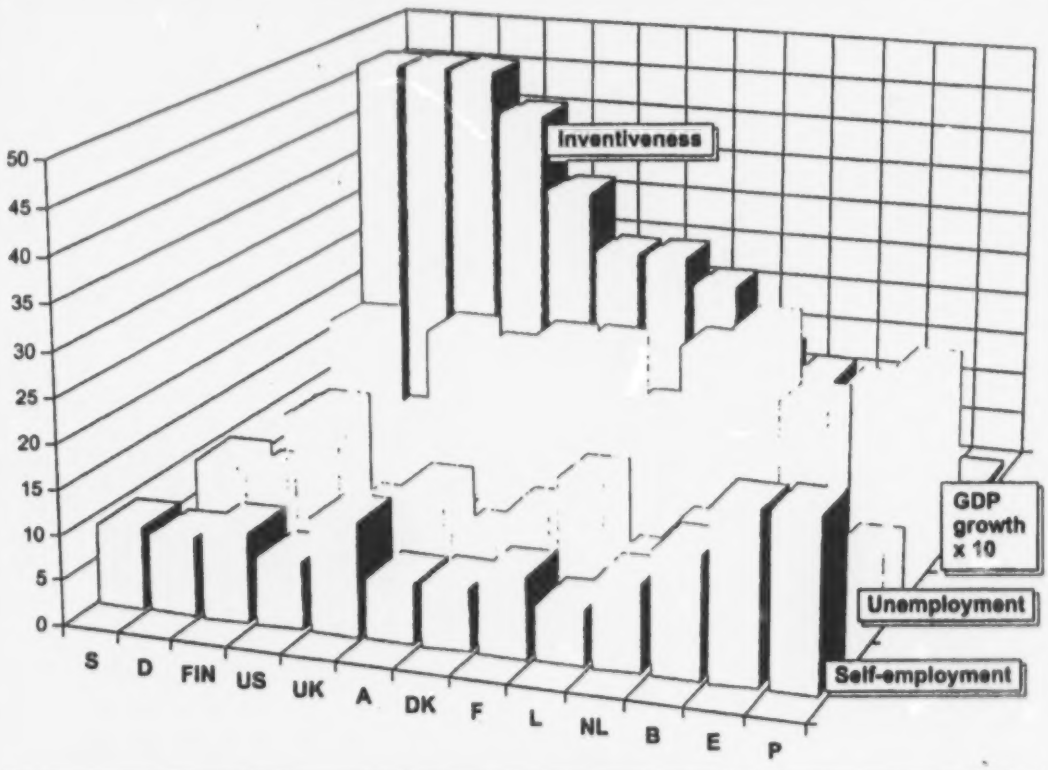
The process of acquiring independence has been encouraged and promoted by public support measures for the unemployed, people at risk and for women. The intentions were, not least, to foster innovation and economic growth, to create jobs and to reduce unemployment.

However, according to Eurostat and OECD data, a close relationship between these factors cannot be found for most countries at the macro level (Figure 4).

Most industrial countries have established *programmes for the unemployed*, in particular the long-term unemployed, to become self-employed, with some degree of success. However, their intensity and success varies. Participation rates in these measures have been rather low and there are some dead-weight effects in that unemployed people are supported who intended to become self-employed anyway.

An emerging sector with close links to SMEs and entrepreneurship is the *'new social economy'*, i.e. the non-profit sector between the State and the market. Entrepreneurs of social enterprises combine economic and social objectives and thus differ substantially from the classical notion of entrepreneurs in Schumpeter's sense. Social enterprises meet needs that are not, or only partly, met by the public sector or the market. Most of these organisations have a social objective, e.g. to help low skilled or unemployed people back into work, to become self-employed

Figure 4: Self-employment, unemployment, growth and inventiveness in selected countries



Self-employment: non-agricultural self-employment 1994 in % of civilian labour force;
Inventiveness: resident patent applications 1994 per 100 000 population;
GDP growth: average growth of the gross domestic product (%) 1990-97 (for better illustration multiplied by the factor 10);
Unemployment: unemployment rate 1995 (%); countries sorted by inventiveness coefficient.

Sources: OECD, 1998. *Fostering entrepreneurship. The OECD Jobs Strategy.* Paris: OECD; European Commission, 1998. *Employment in Europe 1998.* Luxembourg: EUR-OP.

or, more generally, to foster local and regional development.

A growing number of cooperatives, associations and consumer organisations are being established with the aim of social integration through work, at local levels and often also linked with environmental objectives. In this way, social enterprises have absorbed a number of functions from the public sector, which is more and more withdrawing from certain areas of social life.

Increasingly, research efforts are devoted to investigating the links between the training and performance of entrepreneurs, in terms of survival, profitability, growth and employment creation. Most studies indicate that technological know how, high qualifications and specific knowledge of the business segment is a condition *sine qua non* for success. This includes knowledge of local markets and integration in networks with other firms and/or with universities and research institutes.

This calls for a targeted supportive policy which attaches information, advice, training and mentoring an equal importance as access to (risk) capital and the removal of legal and administrative barriers. Taylor-made advice and training programmes are nowadays an integrated element in almost all European programmes promoting entrepreneurship.

From an education and training point of view, however, entrepreneurship and independence should be imparted much earlier, in compulsory schools and initial training. 'To act independently' becomes a key competence in all spheres of working life. This applies not only to potential entrepreneurs but to all workers who are expected to independently plan, perform and control their work. New work organisations, plus the changing expectations and objectives of individuals concerning their work, career and life biography, make them 'entrepreneurs of their own work capacity'.

The basis for independence should already be laid in compulsory schools. Planning and performing small projects, in teams and with changing roles, could be initial steps. This type of project pedagogy is also one of the most useful for the acquisition of key qualifications and social competences.

Before entry into vocational training, contacts to the world of work could be established and intensified. The aim would be to learn to act independently, to gain self-confidence and social competences, and to gather first impressions of the world of work.

At later age, the option 'entrepreneurship' could become an *occupational goal* in its own right. European countries have developed a broad range of related activities, e.g. business simulation, team work projects, mapping exercises or role games, learning offices, model projects and the like. At this age, the internal and external aspects of entrepreneurship should be furthered by constructive – not instructive – learning and by experiential learning outside the classroom in order to develop creativity, motivation, initiative, self-confidence, risk-taking and cooperation.

In most countries, the concrete advice, support and training of the potential business starter is primarily done within higher education or continuing training measures. Many of these measures are supported by the European Commission, in particular in the framework of the European social and regional funds. In general, the objectives of these programmes are changing from more general and unspecific to *targeted measures*.

The following aims – which are partly overlapping – can be distinguished:

(a) promotion of entrepreneurship in innovative and high-tech areas, particularly in the services sector;

(b) promotion of young adults, of women, of long-term unemployed;

(c) promotion of the disadvantaged including immigrants;

(d) promotion of the environment for start-ups, for example by science parks, technology centres, mentoring, business angels, incubators, one-and-first-stop shops, etc.

5. Developing and measuring human resources

'Human resource development' refers to the activation and development of knowledge and skills in companies. The values and policies underlying a humanistic 'European' working life and education and training culture are contrasted by a competing instrumental model of 'human resource management', inspired by neo-Tayloristic work organisation principles and neo-liberal economics in which people are seen as 'resources' in the sense of being utilised to increase productivity and economic performance of the firm.

This raises the question of the future role of 'human resource development' policies in a European context.

The challenge of globalisation emphasises the building of societal frameworks which focus on new forms of inter-organisational cooperation and alliances between enterprises and knowledge producers. In this view, the neo-liberal solution must give way to the promotion of learning by people, firms and regions and to creating appropriate learning environments.

Closely connected with, and even a prerequisite for, human resource development is the *measurement of a firm's human capital*, i.e. the knowledge, skills, competences and other attributes embodied in individuals. Human capital reporting is about measuring values and processes related to the acquisition, development and dissemination of knowledge.

With the increasing importance of knowledge as an intangible asset, reporting on human capital is seen as a method for estimating enterprises' performance as well as future strategies. This has become a constituent factor in most strategic management tools developed in recent years. However, this issue is still subject to a high degree of indecisiveness.

New approaches combining reporting on, and management of, enterprises' human capital are emerging. They focus either on specific elements or on the totality of elements constituting human capital and its utilisation.

For a number of reasons enterprises show a growing interest in human capital reporting (Table 10). Although still primarily occupied with the input side (costs), some programmes evaluate the return side (benefits) based on a standardised framework. Enterprises are increasingly operating with alternative internal and external reporting systems. A common human capital reporting method, however, has so far not manifested itself.

International organisations and most national governments have not yet expressed a clear standpoint concerning the standardisation and dissemination of reporting tools. It seems likely that human capital reporting frameworks with at least a minimum of standardised indicators will emerge.

Unless general approaches are developed supported by governments and/or international organisations, human capital reporting is likely to focus on the management perspective, thereby neglecting other benefits of human capital reporting, such as attracting qualified employees. On the other hand, if a set of *minimum indicators* is established, the potential of human capital reporting is likely to be a benefit for the management and other stakeholders.

6. Exploring skills and training needs by enterprise surveys

Actors in the labour market, as well as researchers, are increasingly interested in solid empirical information on the development of labour demand and skill requirements at the enterprise level, as a complement to surveys on the labour force. Some important questions to be answered by enterprise surveys are, for example, skills shortages and needs, the underutilisation of human resources, links between competitiveness and human capital investment, and questions concerning the evaluation of publicly funded training measures.

However, available data on the demand side (firms) are scarce compared with those on the

Table 10: Main approaches to reporting on human capital

Approach	Calculating costs of personnel policies	Human capital accounting	Human capital management	Strategic management
Period of origin	mid 1960s	early 1960s	late 1970s	early 1990s
Characteristic	Financial utility of personnel selection	Financial value of enterprises' human capital	Learning and dissemination of knowledge as internal management strategy	Combination of financial indicators, human capital, internal business processes, customer relations and innovation
Methods applied	Utility analysis	• Human resource accounting • Human resource costing and accounting	• Learning organisation • Knowledge management	The balanced scorecard
Reporting framework	Cost and benefit calculations	Financial statements	Non-financial statements (if any)	General performance measurements

NB: The period of origin indicates when the approach was introduced. The methods indicated may, therefore, be much younger.

Source: Westphalen S.-Å., 2000. Reporting on human capital: objectives and trends. *In:* Descy P., Tessaring M., eds. *Training in Europe*, Vol. 2.

supply side (workers). Although a large volume of enterprise data is being collected systematically, much of it does not focus on – and even neglects – aspects of training and skills.

> Enterprise surveys can shed light on firms' measures to increase flexibility and the resulting skill needs. Changes in the organisational structure of an enterprise tend to increase both the demand for skilled workers and the need for continuing training. A central determinant for the utilisation and deployment of workers is the entire structure of the enterprise, its production concept, performance, human resources and strategies. These aspects should be covered by enterprise surveys.

The same is true for the analysis of business process reengineering, which covers the whole value-added chain of an enterprise, including subcontractors and purchasers, and calls for a better utilisation of the qualifications of employees.

A deeper insight into training and CVT aspects, and a challenging perspective for VET research, is to be expected from *merged datasets* combining employer and employee data. This research field has begun to emerge rapidly in the past five years.

There are important reasons for considering both individual preferences and enterprise strategies in relation to training. These are not independent from each other: individual choice of training takes into account existing training offers and the subsequent perspectives on the labour market. Enterprises take account of the available human resources in the internal and external labour market when deciding on training.

A number of questions remain concerning the design of enterprise surveys and the elaboration of merged datasets for employers and employees, and in particular concerning international comparative surveys.

Experience with existing national surveys indicates several issues, which should be considered in such surveys:

- the survey should preferably be designed as a *panel* which offers significant advantages in relation to the techniques of data collection, survey and processing;
- an enquiry of a representative group of employees within enterprises would be indispensable for construction of *merged employer-employee datasets* and for comparison of different estimates and preferences on both sides;
- the greatest potential for analysing enterprise surveys – in particular longitudinal studies – is offered by *econometric methods*. Therefore, a number of additional items should be included in the survey in order to gain insight into the most important influences on enterprise training activities and, using merged datasets, consideration of factors induced by the demand and supply side;
- *international comparisons* – based on joint activity in several countries – are useful to qualify national observations concerning, for example, the commitment of enterprises to training, actual and future skill requirements, recruitment and deployment policies, etc. First steps in this direction have been undertaken by the CVTS, and a further potential lies in Eurostat's enterprise demographies.[3]

Part four
Employment, economic performance and skill mismatch

Part four of the report discusses a range of issues in the context of skills/competences and their relationship with employment and labour markets. Starting from a brief presentation of recent employment trends, and a discussion of the economic and social benefits of education and training, the question is raised of whether conventional definitions of formal skills should be complemented or even replaced by the notion of competences which are in reality 'traded' in the labour market. This also touches upon the various aspects of skills mismatch – unemployment, overqualification and skills shortages – which are discussed both from a theoretical and empirical point of view. The last chapter deals with the advantages and problems associated with skill forecasts at national, regional and enterprise level and presents several related activities in European countries.

[3] These are mainly based upon business registers and give no indication on skills and training issues.

1. Employment in Europe

Recent data indicate an improvement in the employment situation in Europe and decreasing unemployment figures. Employment change displays an ongoing shift towards service sectors and higher skilled jobs. However, the differences between EU countries remain enormous. Equally, employment and unemployment figures vary significantly between men and women and between younger and older workers.

Although the overall trend of unemployment has reverted to a downward direction, unemployment, and in particular long-term unemployment, remains at a high level. In addition, a considerable number of people have been sorted out during the previous decade of high unemployment: 'hidden unemployment' in the EU is presumed to account for almost 40% of all people who are unemployed or, under certain conditions, would actually like to work (Table 11).

Table 11: The composition of the labour force potential by gender, EU-15, 1999

Status	1000	%
People in employment [a]	155 273	85.5
Full-time employees	*105 901*	*58.3*
Self-employed, family workers	*21 098*	*11.6*
Part-time employment	*27 370*	*15.1*
Unemployed [b]	16 156	8.9
Unemployed < 1 year	*8 595*	*4.7*
Long-term unemployed	*7 309*	*4.0*
'Hidden unemployment' [c]	10 140	5.6
Total labour force potential [d]	181 569	100.0

(a) Incl. people without statement of employment status;

(b) Incl. people without statement of unemployment duration;

(c) People who would like to work under certain conditions but are not registered unemployed;

(d) Incl. without statement.

Source: Eurostat, Franco A., 2000. *Labour Force Survey. Principal results 1999.* Statistics in Focus, Theme 3-5/2000. (Community labour force survey 1999); own compilation.

Furthermore, youth unemployment, although also slightly decreasing in the past few years, still almost doubles total unemployment (see Figure 8 below). The difficult transition from education and training to work is also illustrated by the fact that almost 50% of young unemployed people are looking for a *first* job – with considerable variation, however, from country to country.

2. Education, training and economic performance

The contribution of education, training and 'human capital' to growth, competitiveness and employment is one of the most disputed topics in research and policy. Furthermore, a number of additional benefits or 'externalities' – most of them intangible ones – are associated with skills, such as effects on health, crime and the avoidance of unemployment and social exclusion.

Research, in particular on economic growth, for a long time neglected the endogenous factors of influence on growth and prosperity, i.e. technical progress and human capital, but concentrated on investments in physical capital and on 'labour' in general. A new insight was brought forward by endogenous growth theories and empirical applications based on these. These theories regard research and development, technical progress, human capital and knowledge as endogenous drivers of economic growth and of at least equal importance as physical capital.

A number of studies more or less confirmed the significant positive influence of research and development, human capital and knowledge on growth. However, several other studies are less optimistic. Moreover, critics argue that these new approaches have not produced a substantial new insight into the mechanics of dynamic growth. Much more research is needed on these issues, including also an improved and more coherent database for international comparisons.

When considering the external effects of education, training and skills, a number of research studies display a positive correlation (not necessarily causality) between human capital and, for example, health, reduction of criminal behaviour etc.

However, these aspects are not yet integrated in an overall measure of growth, prosperity and quality of life. A similar situation applies to the effect of skills on unemployment, although there is strong evidence that higher skills significantly reduce the potential for an individual to spend a considerable part of his or her working life within unemployment. This also has impact on reducing public spending on unemployment and thus indirectly influences economic growth.

3. Dynamics of labour markets and competences

Studies on the relationship between education/training and employment mostly refer to formal qualifications and thus imply a functional relationship between both systems.

In order to understand better what is 'traded' in the labour market, and what are the implications for skill-related imbalances, the concept has to be enlarged in two ways: the consideration of different time-scales in which education, training and production operate; and the notion of 'competences' as a vector of different – formal and non-formal – human productive capacities.

There are considerable *time lags* between the identification of new skill requirements and the period until training reforms will be established and the graduates with update skills enter and pass through the labour market. Since enterprises are interested in a short-term coverage of new skill demands, the diachrony of time scales between skill generation and productive utilisation may lead to 'cobweb cycles' and thus may become counterproductive.

This touches upon the question on how skill requirements can be anticipated early. Whereas the supply and demand for *formal* qualifications (e.g. replacement and recruitment demand, new supply of education/training leavers) can be anticipated and balanced in the short and medium term with certain assumptions, competences and competence needs become unforeseeable beyond a certain horizon.

This assertion goes beyond the classic problems of imperfect information on competences required for a job and on the future performance of an individual in that job. The 'productive value' of an individual with a given set of characteristics will depend on that individual's interaction with the working environment and on the valuation of his or her competences at work. Individuals, in the course of their working lives, draw on their experiences in and outside the workplace to adjust and supplement their repertoire of competences.

For these reasons, research – including empirical research – should focus much more than before on *competences*. Research questions which still have to be tackled are the short- and long-term perspectives and coordination requirements in the systems of skill generation and utilisation.

The provision of appropriate information on possible future developments, and on 'mismatches' beyond formal categories of manpower demand and supply, is a pressing task for research. The same is true of the analysis of the manifold interactions between supply and demand of competences, the impact of education and training expansion on labour markets and competence utilisation, and the role institutions and other agents play in this process.

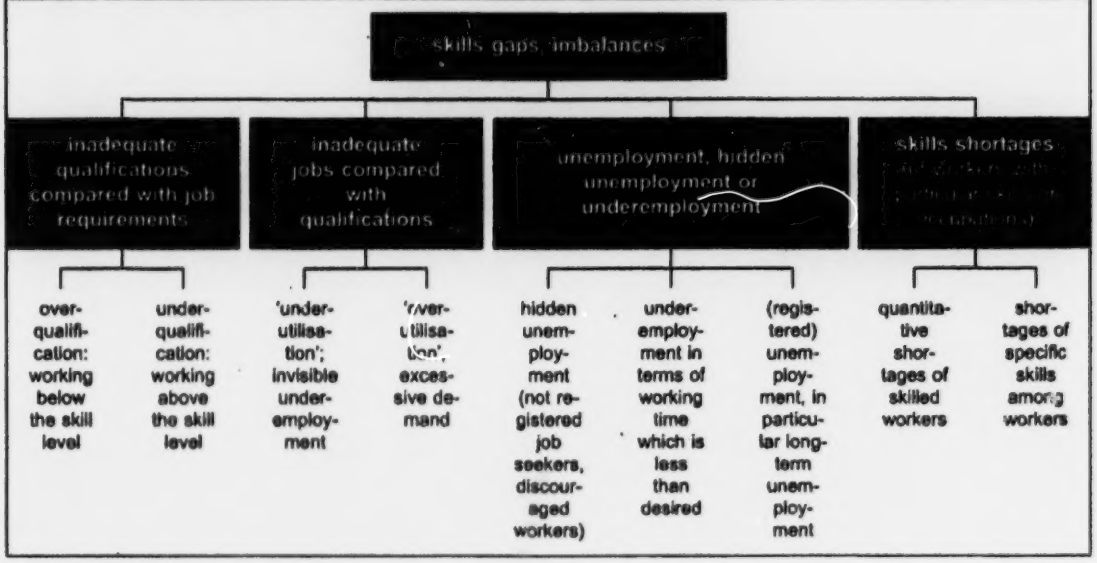
> Overproducing and/or underutilising competences may seem a waste of resources. Avoiding wastage of human resources is one of the central problems of modern economies. It is a political problem in the true sense of the term, because imperfect information and the incompatibility between the time-scales that govern the gestation of competences and their productive utilisation, make it impossible to find a solution based on reliable economic or social calculations only.

Competences are generated in cooperation and interaction between the educational and the productive spheres. Each of the two systems establishes its own strategy in response to the action of the other.

The transition from school to work is a very special moment in the 'confrontation' of the two systems. It is the moment when the differences between the interests of the two systems come into play. At that precise moment, the production system has a customer/supplier relationship with the education system, and its normal behaviour as a customer is to try to obtain the best products at the lowest prices. Skill is regarded by the company as an intermediate good which must yield a return on the company's investment.

> The aim of the education and training system, on the other hand, is to allow everyone to develop his or her potential as far as possible and to become and remain employable. Though operating in a context of imperfect information, it is required to adopt a long-term perspective: the lifetime of individuals. The knowledge imparted by education and training and by non-formal learning will be used – in whole or in part – in a future society about which there is little reliable information.
>
> One aim, therefore, should be to develop at least those framework competences that seem likely to prove durable and to provide the best basis for subsequent further training.

Figure 5: Typology of skills gaps


skills gaps, imbalances
inadequate qualifications compared with job requirements
inadequate jobs compared with qualifications
unemployment, hidden unemployment or underemployment
skills shortages
over-qualification: working below the skill level
under-qualification: working above the skill level
'under-utilisation': invisible under-employment
'over-utilisation': excessive demand
hidden unemployment (not registered job seekers, discouraged workers)
under-employment in terms of working time which is less than desired
(registered) unemployment, in particular long-term unemployment
quantitative shortages of skilled workers
shortages of specific skills among workers

Source: Authors

4. Skill mismatch in the labour market

Skill mismatch in the labour market is discussed in this chapter under three angles: the persistence of unemployment, overqualification and shortages of skills (Figure 5). These phenomena are coincident in most EU countries.

(a) Concerning *unemployment*, long time series over the past 35 years reveal that in OECD countries the level of unemployment tended to remain at an ever higher level after each economic recession (Figure 6).

Research has explained this phenomenon of 'hysteresis' or persistence of unemployment by a decreasing probability of individuals finding a job with increasing unemployment duration ('state dependence'). The long-term unemployed increasingly become unemployable because of a loss or obsolescence of skills and work attitudes, or because of a loss of 'reputation' in the eyes of employers.

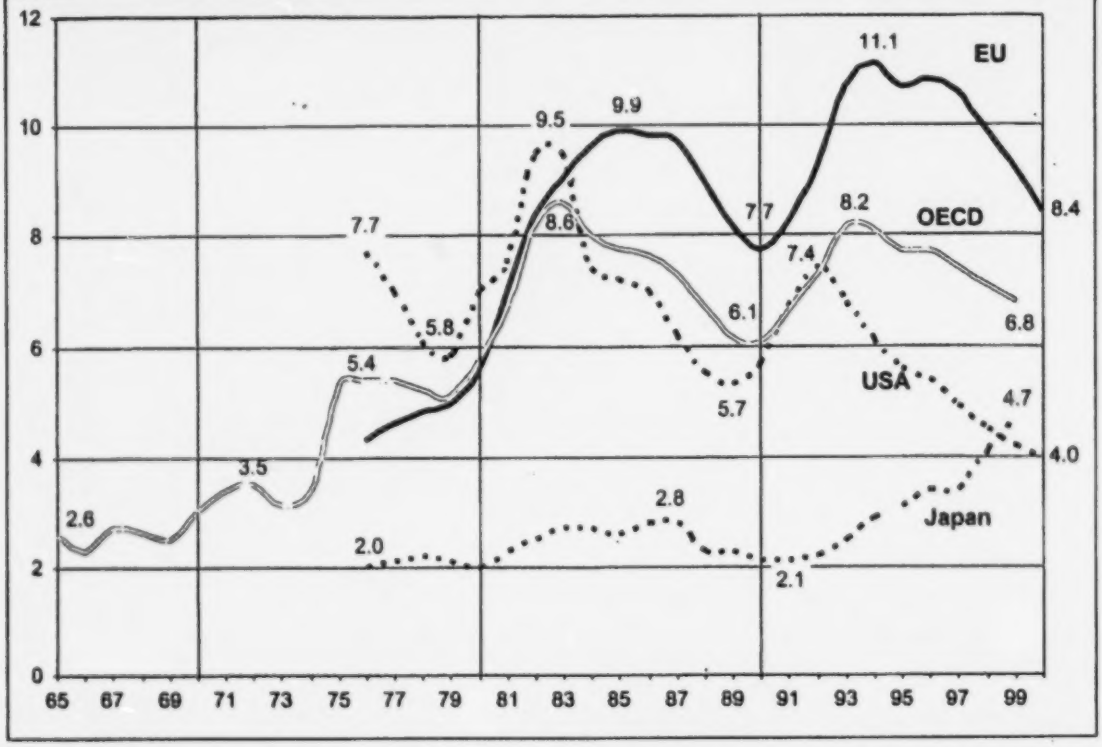
A rival view suggests that it is less unemployment itself and the associated loss of employability which explains structural and long-term unemployment. Instead, individual 'heterogeneity' in terms of skills, gender and other characteristics – which existed already before entry into unemployment – as well as selection processes by employers, are responsible for the high unemployment level in Europe.

Reasons given are skill-biased technical change, which favours the higher skilled, deindustrialisation with ongoing shifts towards higher skilled sectors (particularly services) and occupations, and competition from low-wage countries which all primarily affect the lower skilled workers.

Empirical evidence seems to prove the heterogeneity thesis, although the situation is different from country to country (Figure 7). Depending on which of the two explanations is more valid for a particular country, political measures should be different. Reactivation of the long-term unemployed, combined with the provision of temporary work experience, with training to compensate for the erosion of skills, with psychological support, lowering wage costs and information campaigns for employers, are some of the measures which should be appropriate if state dependence is the dominant reason for persistent unemployment.

If the heterogeneity argument applies, in particular for the low skilled, the main responsibility lies on education and training policies to upgrade the level of skills, to impart transferable as well as practical skills, to support non-formal learning and to promote a continuous adaptation to labour market needs in a framework of lifelong learning.

Figure 6: Unemployment rates in OECD countries, the European Union, the United States of America and Japan, 1966/73 - 1999/2000, %



Legend: annual averages; EU-data: % of labour force; OECD data: % of civilian labour force, standardised unemployment rates.

Sources: OECD. *Economic outlook*, various issues; Eurostat Newcronos database: unemployment, theme 3, Series B (various issues); European Commission, 1999. *Employment in Europe 1999*. Luxembourg: EUR-OP.

These skills are seen as facilitating the entry into working life as well as ensuring employability in the longer run.

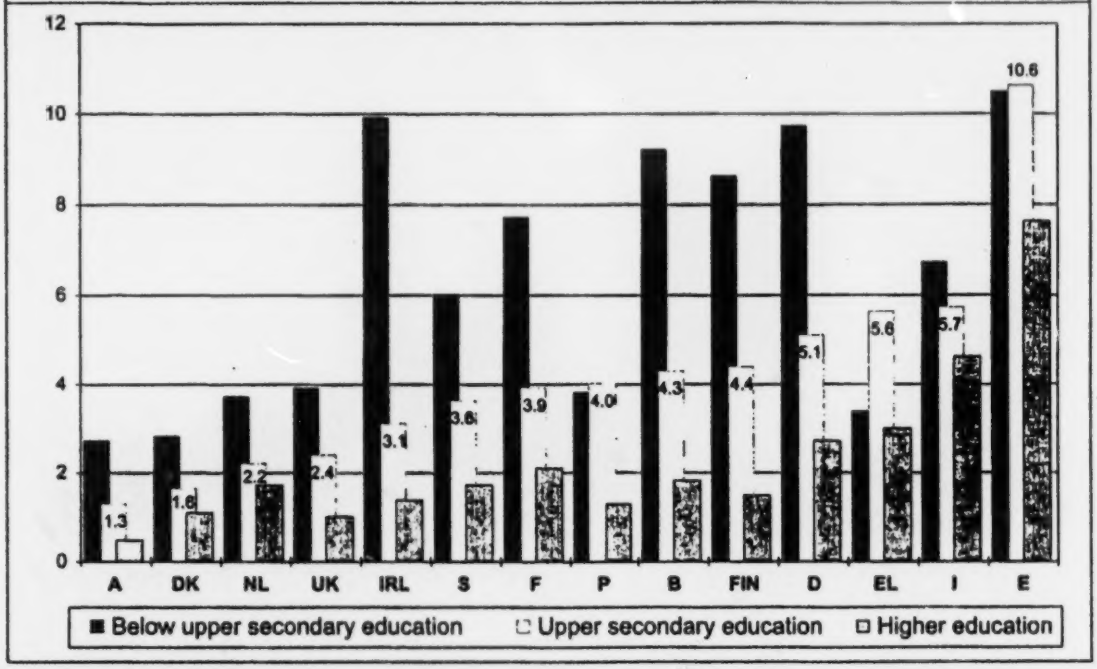
> However, in reality both reasons for persistent unemployment – state dependence and heterogeneity – will coincide. This calls for research and coordinated policies which do not concentrate on one of these aspects but try to integrate both, also taking into account the political, economic and social contexts of particular countries.

(b) The second type of skill mismatch refers to *overqualification*, i.e. the deployment of a worker below his or her level of qualification. Overqualification is seen as of increasing importance for European labour markets as numerous studies reveal. Overqualification seems to affect lower and intermediate skills, and in particular women, more than people with higher skills or men.

A number of theories explain, at least partly, the phenomenon of overqualification. Empirical measurement by 'objective', 'subjective' or 'indirect' approaches equally have their pros and cons.

Results of empirical studies based on these approaches make it difficult to gain a clear picture for different countries and periods. There are substantial differences from country to country, between younger and older workers depending on their particular status (adequately employed, unemployed, at the beginning of their work career) and between men and women. Moreover, the attitudes of employers and workers, as well as institutional arrangements and regulations (e.g.

Figure 7: Long-term unemployment rates by level of education, EU-15, 1997, % (a)



(a) Long-term unemployed (duration of unemployment 1 year or more) in % of the labour force with same level of education; sorted by upper secondary education.

Source: Bollens J., 2000. Unemployment and skills from a dynamic perspective. *In:* Descy P., Tessaring M., eds. *Training in Europe*, Vol. 2; (based on Eurostat: Community labour force survey 1997).

concerning unemployment benefits) affect the problem of overqualification considerably.

In addition, a clear picture of overqualification is hampered by varying results between different studies and approaches, even for one particular country. Substantial progress is being made by using longitudinal data and an enlarged set of indicators for overqualification.

A number of policy measures could remedy or prevent an increase of overqualification. These are appropriate training systems which impart broader as well as 'marketable' skills. Educational and vocational guidance is asked to improve information on actual and future skill needs, and thus of the awareness of the long-term risks and chances associated with a particular choice – or political promotion – of an education and training programme. Other measures discussed are, for example, the promotion of regional mobility, the redefinition of unemployment benefits, wage differentiation and an increased involvement of people in financing their own training and higher education.

Research should make much more use of longitudinal data which take into account the gradual process of skill utilisation (or non-utilisation) in a work career perspective. More attention should also be given to the non-formal components of skills: formal qualifications alone seem less and less sufficient to explain the complex processes of recruitment, skill utilisation, mobility, career and promotion of workers.

(c) The third type of labour market mismatch discussed in this report involves *skills shortages*. These are increasingly seen as inhibitors to the development of a knowledge- and information-based society.

Most skills shortages reported for EU countries concern lack of numbers of workers with ICT and

engineering skills, but also of economists, teachers, and in the healthcare sector. Moreover, firms complain about lack of core skills among workers – literacy, numeracy, communicative and basic ICT skills. A prospective study at European level, based on interviews with information system managers and intermediaries as well as on education and training statistics anticipates a shortage of more than 1,7 million information technology workers by the year 2003 (Table 12).

Against this background, current policy at national and European level focuses on the promotion of *e*-learning and supportive infrastructures, on imparting basic skills and on the development of ICT-related pedagogical knowledge of teachers and trainers.

Sceptical remarks on the evidence of skills shortages concern not only the occasional lack of transparency in survey methodology, but also the fact that shortages of skilled personnel in a firm are only one, and often not the most important one, of several other obstacles to innovation and production growth. Another serious counter-argument is that shortages may be of short or medium term duration and may be reversed after some years. Given the long time lag between the generation and productive use of skills, this may result in 'cobweb cycles' which induce serious problems in the longer run.

Thus, for example, present shortages in the ICT sector in some countries may also be the long-term consequence of cut-backs of public funding for computer and engineering courses, as well as of high unemployment among computer specialists and engineers in the past which also affected the choice of study at that time and led to a decrease of graduates some years later.

This calls for careful consideration of cyclical fluctuations – in particular in educational and training policy measures – and their long-term effects on individual choice of education and training and on the new supply of skills.

Table 12: Shortages in information technology skills in Europe[a], 1998-2003

	1998	2000	2003
Demand (1000)	8772	10421	13071
Supply (1000)	8313	9189	11331
Shortage (1000)	459	1232	1740
Shortage (%)	5	12	13
among which shortages in: (%)			
Internetworking skills	14	23	33
Application skills	4	12	10
Distributed skills	5	10	10
Technology neutral skills	5	9	14
Host based skills	3	3	3

(a) European Union and Switzerland.

Source: IDC (International Data Corporation), Milroy A., Rajah P., 2000. *Europe's growing IT skills crisis.* http://www.idc.com

5. Future skill requirements

Although man is not given to know the future, efforts should be made to elucidate future possibilities and dangers, and thus political measures necessary to prevent future imbalances associated with economic change and the supply and demand of skills.

Forecasts aim to make decision-makers at all levels aware of the consequences of actions taken or not taken. They may give an indication of long-term developments, e.g. demographic change, and their implications for education, training and employment. The more rapid the change, however, the more difficult and insecure forecasting will be.

Therefore forecasts also have assessment and warning functions in that they indicate need for action or warn against undesired developments. Forecasts never can anticipate future realities. But they can serve as a didactic tool in improving understanding and awareness of the actors concerned in relation to future possibilities and the ways of influencing them in time.

This is the essence of a broad (and never-ending) discussion on skill and employment forecasting, its pros and cons and its possible use for decisions of individuals, enterprises and the State.

There are manifold *approaches* to skill forecasting. They range from 'hard' quantitative projections of supply and demand, partly based on econometric and on flow and transition models, to more qualitative approaches such as scenarios, Delphi enquiries, monitoring, benchmarking, expert panels and 'holistic' approaches.

Quantitative skill forecasts are carried out in several EU countries such as in Germany, Ireland, the Netherlands and the UK, and partly also in Finland and Sweden. Several CEEC countries, which have a certain background in economic and manpower planning, are reorienting themselves towards approaches used in western countries. However, not all European countries are convinced of the relevance and use of such forecasts. They prefer, partly also due to a lack of statistical infrastructure, more qualitative or monitoring approaches involving networks and actors at regional or local level. These issues are discussed in more detail in the report.

Moreover, the scope of forecasting is being extended. This is done, for example, by the introduction of generic skills and competences in addition to formal qualifications (which prevail so far in forecast models), by the consideration of the company level and increasingly of regional and local levels.

Equally, future developments and respective strategies are being elaborated at European level. However, due to restricted data and to the diversity of European economies and skill patterns, these forecasts are mostly prepared in the form of scenarios, benchmarking exercises and prospective analyses, partly including the development of relevant indicators such as demography, economic growth and technological development.

Part five
Individual performance, transition to working life and social exclusion

The various issues examined in Part five of the report have more of a focus on the individual level. Starting with a review of research on the determinants of participation in training and on the impact of training on individual performance, in terms of pay, unemployment, productivity and mobility, it continues with a review of the latest research on transitions from the education system to working life, an issue which continues to attract the attention of researchers and policy-makers. Chapter 3 looks at the factors causing exclusion from the labour market and from training measures and at the situation of workers with a low level of qualifications.

1. Training and individual performance

It is a widespread belief that education and training have significant positive effects on individual performance and, in general, are able to explain a major part of the variation in wages, unemployment and other variables. However, there are considerable differences in research findings on the incidence and impact of training depending on the national education and training system, and on the nature and quality of data and research methods.

At an aggregate level, the positive relationship between education, training and individual performance has been confirmed by numerous research studies. Those who are better educated and trained are, on average, more frequently in gainful employment, have higher earnings, participate more often in continuing training, are less often unemployed, are more often self-employed, have a higher regional mobility, and work with newer and more high tech equipment.

Although these findings indicate clearly the benefits of training for the individual, they are not a guideline per se for policy. There is evidence that *self-selection*, i.e. the impossibility of comparing training outcomes of an individual with the same individual without training (or with a perfectly comparable control group) may bias the results seriously.

In addition, non-negligible elements of difference in training outcome – such as earnings, unemployment or work careers – cannot be attributed to education and training alone. Innate abilities, heterogeneity of abilities and preferences, family background, political events, luck and economic and technological development are all factors which are relevant and bias the results, if not included in the analysis.

By and large, empirical evidence suggests that structured training systems with high investment in initial training tend to lower individual returns to continuing training (Table 13). This seems to be the case in countries such as Germany and France. Conversely, in less structured initial training systems (such as the UK and the US) individuals yield higher returns to continuing training.

Some findings challenge the role of government in training. Obviously formal education and training cannot protect against all the storms of life for all people, but they may be very strong weapons when used at the right time, to the right extent and with the right content. At other times in an individual's working life, other strategies such as non-formal learning, regional, firm or occupational mobility might be more helpful.

Table 13: Annual rates of return to education in selected OECD countries by gender, 1995, %

	Upper secondary education	Non-university tertiary	University education	Upper secondary education	Non-university tertiary	University education
	Women			Men		
Australia	12.5	7.9	6.7	7.5	9.7	10.4
Canada	16.1	**28.1**	**28.5**	12.5	**23.0**	**16.5**
Denmark	11.8	5.1	9.2	10.4	5.2	11.0
Finland	8.1	**12.2**	**14.3**	10.4	10.5	**14.8**
France	14.1	**20.1**	**12.7**	14.2	**17.6**	**14.1**
Germany	5.5	8.7	8.2	5.7	**16.6**	10.9
Ireland[a]	**28.8**	8.2	**17.4**	**18.6**	**11.7**	**14.0**
Italy	9.5	—	4.6	10.4	—	9.9
Netherlands	**24.4**	—	10.5	14.1	—	10.8
Norway	**17.3**	7.8	**13.3**	11.3	9.4	11.6
Portugal	**32.4**	—	**28.3**	**33.3**	—	**27.3**
Sweden	9.9	4.2	5.3	10.9	6.5	8.2
Switzerland	**22.1**	**17.7**	5.2	**19.0**	**27.1**	5.5
UK.	**19.1**	**13.7**	**19.1**	14.3	4.8	12.7
US	**22.9**	10.5	**12.6**	**26.3**	8.9	12.6
Average[b]	*16.4 (0.44)*	*11.1 (0.68)*	*12.5 (0.56)*	*14.9 (0.46)*	*10.7 (0.89)*	*13.6 (0.30)*

(a) Data refer to 1994; (b) unweighted average.

NB: bold: above average

Source: OECD, 1998d. *Human capital investment. An international comparison.* Paris: OECD/CERI, Table A4.4.

For supportive VET policies, an adequate, systematic and regular research design *ex ante* is necessary to better understand the manifold relationships between VET activities and their results. Tight public budgets will cause the search for evidence of the impact and efficiency of training programmes to grow in the future. A tailored research design, preferably based on longitudinal data, that takes into account the diversity of situations, heterogeneity of individuals, differences in training systems, governments, markets, etc., is, however, expensive and takes time.

Comparative VET research based on microdata is, or can decisively be, improved by regular Europe-wide data sets, such as the European labour force survey, the European Community Household Panel, the Continuing Vocational Training Survey or the International Adult Literacy Survey. Despite some remaining methodological problems, international surveys should define the most relevant human capital and training variables in a more comparable way. Furthermore, access to these datasets for research should be considerably improved.

2. Transition from the education system to working life

The stage of transition from education and training (ET) to working life has attracted the attention of researchers and policy-makers for well over 1-2 decades. The dynamics that underpin this stage need to be understood if policies are to be better targeted.

In comparison with adults, young people are at a relative disadvantage in the labour market in terms of both the volume and quality of employment, despite a number of parameters that are favourable

in the short term: gradual reduction of the size of the youth cohorts in most European countries, general increase in their level of education, longer schooling, larger relative growth of sectors most likely to recruit a young labour force and introduction of active measures to help young people to gain a foothold in the labour market.

Unemployment is having more of an impact on young people, especially the less qualified, than on adults (Figure 8). Young people are occupying more precarious jobs and are experiencing increasingly long periods of transition between leaving the ET system and finding stable employment.

From an individual point of view (school leavers'), transition can be considered as a period of changing status, during which young people move away from full-time initial ET towards a stable position in (or possibly a withdrawal from) the labour market.

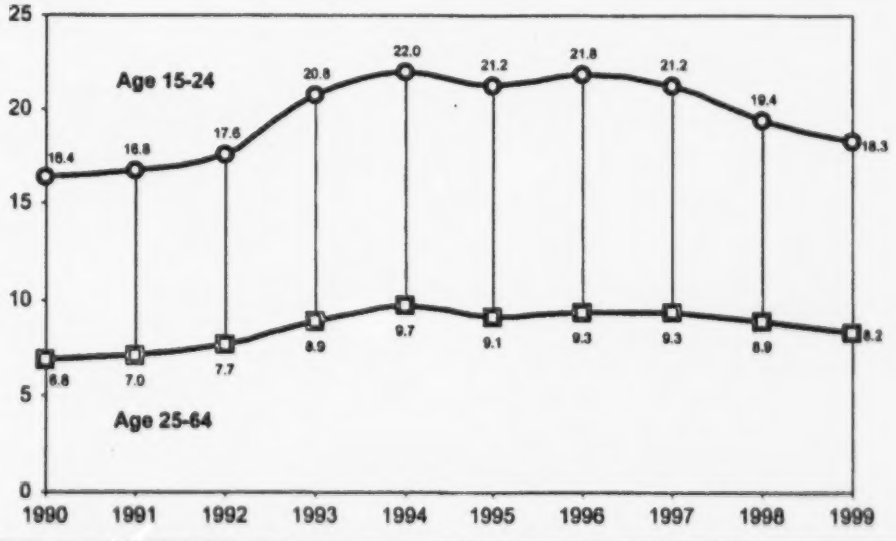
Comparative research is a very valuable tool in studying the determinants of this transition. It makes it possible to measure the differences and similarities between ET in different countries, to compare the processes of labour market integration and to identify the determining factors of these processes.

The nature of ET – level of standardisation and differentiation – and the labour market – predominance of internal markets, extent of the system regulating access to jobs, e.g. occupational markets – varies in Europe, as do the links that unite them (ranging from no links to a network of very close links). In addition, specific national institutional features obviously have a significant impact on the way in which socio-economic inequalities are reflected in school success, in labour market integration and in individual paths.

The way in which the labour market is structured is not directly linked with ET systems, but may well have an impact on young people's transition from the education system to stable employment.

When ET systems have a relatively general orientation and internal markets dominate the labour market, labour market entrants acquire their competences largely on the job. Most

Figure 8: Development of unemployment rates 1990-99 - comparison of young and adult people, EU-12/EU-15, %



NB: Figures prior to 1995 refer to EU-12.

Source: Eurostat: Community labour force survey.

young people enter the labour market at low occupational grades and are at a disadvantage when competing with workers already employed by the company for better posts (in terms of career and job security). In occupational labour markets, however, entrants have a good chance of finding a job that is in keeping with their particular occupational qualification.

The entry of young people into working life differs greatly across Europe. In terms of the risk of unemployment, the European countries can be divided into three groups:

(a) Austria, Germany, the Netherlands and Denmark where the unemployment rate among young people is relatively low at the end of their first year in the labour market (between 8 and 14%);

(b) the United Kingdom, Ireland, Belgium and France where unemployment rates at the entry stage can be considered average (from 18 to 36%);

(c) the Mediterranean countries (Portugal, Spain, Greece, Italy) where these rates are highest during the first year in the labour market (from 21 to 49%).

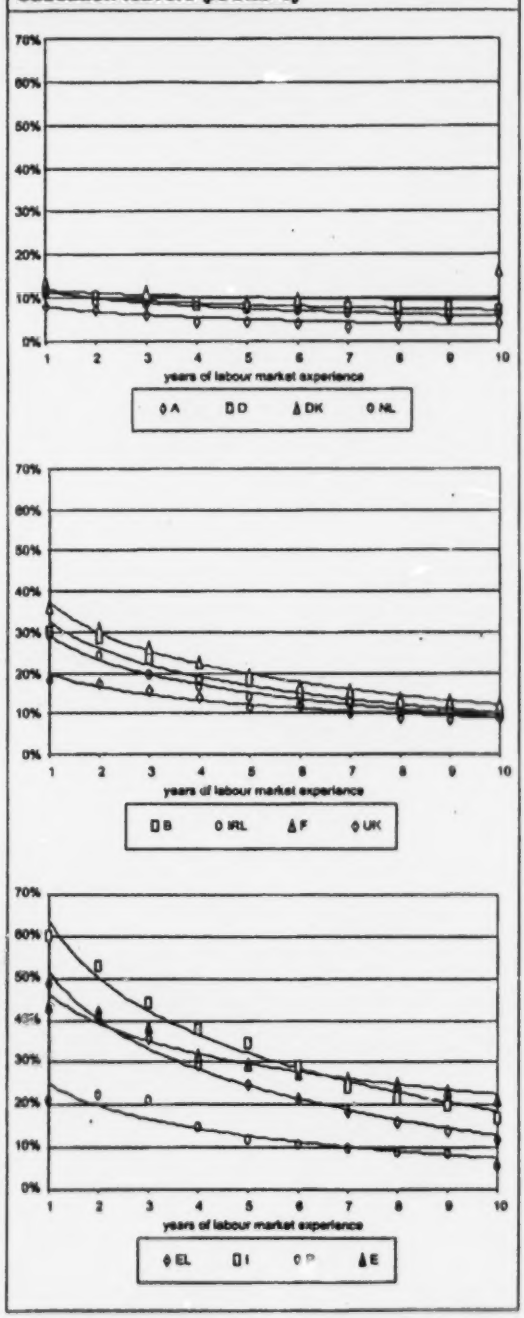
Differences quickly become less marked during the first ten years in the labour market. After ten years, the differences between countries are much smaller (Figure 9).

To study the transition of a 'youth' category solely on the basis of age is to postulate that the behaviour of people of similar ages is very homogeneous in terms of levels of education and age of entry into working life. Nevertheless, young people in a particular age group may be in very different situations (such as further education, repeated years, military service, inactivity, working life – employment and unemployment). It is therefore best to base any analysis of transition on the length of time that young people have been in the labour market, i.e. the length of time since they left the ET system.

For instance, young entrants are more likely to be offered a fixed-term contract. However, we may ask whether the greater precariousness of jobs occupied by young people, in terms of status, is due to a lack of experience or a lack of length of service in enterprise.

If the latter were the case, freshly recruited experienced workers would also be more likely to be offered fixed-term contracts. Recent recruitment

Figure 9: Unemployment rate by potential labour market experience of upper secondary education leavers (ISCED 3)



NB: Markers indicate actual values, lines are trendlines (logarithmic trends).

Source: Gangl M., 2000. *European perspectives on labour market entry: A matter of institutional linkages between training systems and labour markets?* MZES Working paper 24. Mannheim: Mannheim Centre for European Social Research.

shows that the advantage that 'seniors' possess in terms of employment status is relatively small (except in Sweden). It is new recruits in general who bear the burden of flexibility – not just young people.

However, cross-section data analysis does not allow a detailed look into the transition process which precedes the acquisition of a stable job. Only longitudinal studies enable this kind of analysis; but there is no longitudinal study at European level from which comparable data on transitions can be obtained.

The TSER CATEWE project (*Comparative analysis of transitions from education to work in Europe*) combines cross-section data analyses from labour force surveys with temporal series (flows) obtained from the transition surveys conducted in some countries (France, Ireland, Scotland, the Netherlands). At the time of drafting of this report only partial results of this project were available, which show that, combined with the cross-section data, the longitudinal data (even though from only some countries) provide a very comprehensive analysis of transitions between the education system and working life in Europe.

The research concludes that at present the best European ET models feature a high level of integration and coordination between the State, ET providers and employers. It therefore seems crucial to construct strong links between the ET system and the main economic players, especially at sectoral, regional and local level.

The experience gained from research on transition is much more extensive than in other fields of education and training research; however, few *comparable* data are currently available. They are limited to data from the labour force survey (which does not deal specifically with this issue[4]) and to comparative longitudinal databases, partly funded by the European Commission, which were set up thanks to cooperation between researchers in a few countries.

The lack of information concerning demand for training is one of the main features of research on transition; current research therefore tends to be biased towards the individual level and the supply side. It is clear that more studies need to be conducted within companies.

Facilitating the transition between the education system and working life is a major political priority. However, there is at present no solid basis of empirical research that the Member States and the EU could draw on to help them to decide which measures to introduce, due to the inadequacy of available data and the lack of comparative analyses. These gaps need to be filled by setting up appropriate databases and by developing comparative research which focuses on the impact of the measures adopted.

3. Social exclusion and reintegration via training

The structural changes that have reshaped the economies of the industrialised countries over the last 20 to 30 years have also led to major changes in the structure of the labour market and social classes. Social exclusion in one form or other now threatens many more people.

Social exclusion involves the creation of dividing lines between certain groups and the rest of the population. Sex, age, health, standard of education or nationality are key factors in explaining non-participation in the labour market and training schemes.

A study of the relationship between unemployment and social exclusion shows that there are important variations in the ways in which the European social welfare systems provide a certain standard of living for the unemployed: on the one hand, the countries of northern Europe where a large proportion of unemployed people are provided with a relatively good standard of living and, on the other hand, some southern European countries where jobseekers receive minimal financial assistance.

If social exclusion is defined as a situation in which poverty goes together with social isolation and the non-achievement of life projects, unemployment clearly constitutes a major risk factor. In the southern countries, where poverty is more prevalent than in the northern countries, unemployed people are protected from social exclusion by solid ties with family and friends. The risk of isolation is much greater in countries such as the United Kingdom, France and Germany where the benefit system is fairly extensive (although levels may in some cases be low or irregular) but social ties are not as strong.

4. Although, in 2000, an ad hoc module on transition has been included in the Community labour force survey. Preliminary results should be available during the second half of 2001.

Nevertheless, it is worth keeping in mind that unemployment and labour market exclusion is linked more to the general shortage of jobs and the recruitment practices of employers than to individual attitudes, failures or features. Improving the human capital of the excluded through the provision of education and training is therefore not enough; some structural and institutional barriers have to be lifted if the divide separating those who are well integrated in the labour market from those who are not is to be removed.

In some cases, however, unemployment is determined by individual choices:

(a) the individual may consider unemployment advantageous from an economic point of view; in this case 'the unemployment trap' may be the result of a financial calculation;

(b) the impact of the 'training trap' is more marked as jobseekers who embark on training do not just have to make a financial outlay (transport, child-minding, course materials, etc.) but also have to put off looking for a job. Training then takes the form of a 'risk' activity whose (immediate) result is far from certain.

It cannot be concluded from empirical findings that unemployed people are less committed to work than the employed. An unemployment benefit system, moreover, does not weaken people's desire to work[5] (with the possible exception of women in countries where gender differences are culturally more traditional) (Table 14).

In most European countries, publicly financed training is available only for unemployed people receiving benefits (who may also have to have been unemployed for a minimum, and in some cases continuous, period). This causes the *institutional exclusion* of all groups of unemployed people who do not belong to this category, and particularly the unemployed who have not registered with social welfare or labour offices.

Tighter public budgets mean that the emphasis is being placed on the economic efficiency of training programmes, judged against the *results of the programme* (percentage of participants who find a job after completing the course). The more the stress is placed on efficiency, the more programmes are targeted on those individuals most likely to achieve the set objectives ('creaming off') and therefore the more selective they are (*economic exclusion*).

When service providers are freer to decide on their selection criteria, they tend to give priority to the criterion of motivation (a person's desire to improve their situation). This may lead to a kind of *psychological exclusion* since the unemployed person's motivation and needs shape their desire to participate in, their access to, but also their success in, training.

Training which does not aim to reduce the gap between the 'culture' of the individual and the predominant 'culture' of the labour market may

Table 14: Comparison of the commitment to work of workers and unemployed people (leaving aside financial necessity), EU-15, %

Country	% committed unemployed	% committed workers
DK	82.8	76.3
NL	80.4	67.3
S	78.7	75.9
UK	78.3	53.0
I	75.6	42.7
EL	74.8	49.4
IRL	71.4	62.1
P	70.7	58.8
D (East)	69.0	61.2
A	66.7	54.0
B	60.4	44.4
F	59.4	36.9
FIN	57.5	55.2
EL	51.7	35.8
D (West)	48.7	43.2
EU-15	63.7	48.0

Source: Gallie D., 2000. *Unemployment, work and welfare*. Paper presented at the seminar 'Towards a learning society: innovation and competence building with social cohesion for Europe'. A seminar on socio-economic research and European policy, Portugal, Cascais, 28-30 May 2000.

[5] This concept has, however, many facets; while some people may say that they are 'motivated to work', they may lay down certain conditions or be unavailable.

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bring about the exclusion of those people whose culture least matches the predominant culture of the labour market (*cultural exclusion*).

Active measures are increasingly in vogue. Social 'activation' and related measures aim at the rapid social reintegration of people excluded from the labour market and dependent on social assistance. Under most programmes, this reintegration takes place via the labour market. The 1990s saw the introduction of what can be termed '*workfare*'[6] where unemployed people receive financial assistance only if they are prepared to accept employment. Should they refuse to accept employment they may suffer sanctions that may go as far as total withdrawal of unemployment benefit (*political exclusion*).

An evaluation of the results of workfare needs to be based on a range of criteria and not just on the jobs obtained. Account needs to be taken of the characteristics of these jobs and of the future of people not taking part in the measure.

Training seems to be an effective active measure against unemployment. This measure has a positive impact for the most disadvantaged, as an increase in the number of people participating in training leads to more flexible selection criteria.

Certain European countries are moving in the direction of what can be termed '*learnfare*'[7]: the beneficiary must attend training to continue to receive benefits. In this case, unemployed people have to be informed how the measure enhances their employability (in order to improve their motivation and justify the compulsory nature of the measure).

Approaches which neglect the economic context are based on models of 'individual deficiency' and on the assumption that people are unemployed because they lack 'qualities'. Responsibility for success or failure is thus transferred to the individual. According to this point of view, the role of the public authorities is to provide training opportunities; people who, despite these opportunities, continue to be unemployed are suspected of being either unwilling to work or incapable of working.

[6] This term is a combination of 'work' and 'welfare'.

[7] Applied to learning, this formula refers to the introduction of an obligatory system of education and training.

In a context of high unemployment and inflation of qualifications, a low level of education is increasingly synonymous with a precarious situation in the labour market. The socio-economic context and the education and training system in each country help to define the 'risk group'. There is nevertheless an emerging consensus in Europe that the upper secondary level (ISCED 3) has become the minimum needed for a good start in working life

Several hypotheses may explain the deteriorating working conditions of the least qualified, whose numbers are now falling:

- the redistribution of employment between the sectors: low-skilled jobs are concentrated in sectors that are in decline;
- the bias that the new technologies have introduced towards more highly skilled people (*skill-biased technological change*) which is leading to polarisation or mismatch on the labour market (overqualification, underqualification).
- labour market substitution: in a context where there are too many diploma holders, posts that would normally be occupied by workers with low level of qualification are being occupied by people with better qualifications. The result is that these less qualified people are being expelled from the labour market;
- labour market segmentation: the distinction between a hard core (*core workers*) and a flexible core (*non-core workers*, in the sense of *marginal workers*) of workers is central to theories of segmentation. The former group is closely linked to the workplace through stable and advantageous contracts. The latter group is recruited under fixed-term or temporary contracts, and is mainly employed in posts necessitating fewer qualifications.

In general, and in order to prevent less qualified workers from being excluded from training, VET and employment policies have to concentrate on strategies and tools that can help them to access learning opportunities: targeted policies, social partner participation, guidance and counselling, recognition and use of non-formal learning, etc.

Improving the situation and employment prospects of less qualified workers is a necessity if European countries are to remain competitive and if the marginalisation and exclusion of a significant proportion of the labour force is to be prevented.

Comparative research has also started to look at those training processes likely to be the most effective. The TSER programme has funded a project studying the effectiveness of training available for the long-term unemployed in seven countries: Belgium, Denmark, Greece, Ireland, the Netherlands, the United Kingdom and Norway.

One of the findings of this study was that creaming off is prevalent and that it is having a positive impact on the effectiveness of training schemes, thus favouring the highest achievers and abandoning those who really suffer exclusion. Excessive creaming off reinforces the exclusion of the most disadvantaged groups and entails a high social cost.

In future the factors that determine the effectiveness of training measures should be explored further. More differentiated models need to be developed to pinpoint the impact of the various schemes.

The current ageing of the labour force is likely to generate a higher labour demand; in order to meet this demand for labour, it will therefore be increasingly important to reintegrate the unemployed and non-workers – preferably after appropriate training – and to identify the competences of all workers. If this demand is not met, the mismatch between supply and demand may lead to economic recession.

Offering unemployed people training which does not lead to real qualifications – but which instead is limited to immediate employability – may well undermine integration prospects when economic growth picks up and the demand for competences changes. Training efforts therefore need to be 'sustainable', i.e. valid over the long term and under changing working conditions.

Financial assistance offered by public authorities should, on the one hand, help the unemployed to avoid poverty and, on the other hand, free them from the daily problems of social and material 'survival' so that they can actively look for a stable job that is in keeping with their competences and aspirations. Encouraging unemployed people to accept any kind of job worsens their chances of integration (under-skilled and unstable jobs, risk of a return to unemployment).

Back-up measures should be put in place to ensure the continuing participation of the unemployed in the life of the community. Such measures reduce the risks of isolation and the subsequent loss of social identity.

As far as the individual is concerned, it is crucial to take account of motivation and the ability to learn and to evaluate the potential benefits of learning. Unemployed people want more than anything else to work. A sustainable policy to motivate and re-integrate the unemployed, under which employment and training can be combined, is therefore preferable to compulsory training programmes.

Part six
VET research outside the European Union

Chapter 1 of this Part sets out to survey VET research in eleven countries of central and eastern Europe (CEECs). It endeavours to evaluate the extent to which research is responding to the major socio-economic challenges posed by the transition from a centrally planned economy to a market economy. The aim is to identify the main weaknesses in VET research in the CEECs and to make it more transparent, by analysing its findings and its failures.

Chapter 2 reviews VET research, in particular the role and main issues of research institutions, in a selected number of other non-EU countries. In addition, research undertaken by international organisations is described briefly.

1. VET research in the countries of central and eastern Europe[8]

Generally speaking, VET research in the CEECs appears to have responded successfully to the major challenges of the transition period. In the past few years, national research has demonstrated increasing maturity; it has played an increasingly assertive part in the reform process. However, its development is being hampered by certain systemic (organisational, institutional, financial) obstacles.

In addition to the problems specific to the economic transition, the CEECs must submit to the same demands as EU Member States: global-

[8] Albania, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

isation of the economy, technological change and the advent of the information society. The most important challenge facing the CEECs is to complete the transition to a market economy while at the same time creating enough jobs to avoid too high a level of unemployment and inactivity.

The change of regime has had a profound impact on the research community. Under socialist rule, research was dominated by political rhetoric dictated by the regime. Applied research was rejected, since the regime did not consider it necessary to use empirical data to support (or question) its political arguments.

It is essential for research to have a global understanding of the system and of the dynamics of change. VET research in the CEECs is often focused on analysis of isolated elements of the system, with little attempt to obtain an overall view of the system and thus understand the interactions that govern its operation. This fragmentation of research is reflected in the division of institutional structures, each 'specialising' in studying one element of the system, with little information on results obtained in related fields.

Another weakness is the lack of sound theoretical research into the socio-economic context (in the broadest sense) of VET. The involvement of the social partners in research is limited. Private enterprises and non-profit-making associations also play an extremely limited part. Research into civil society is not yet very active.

VET research is mainly financed by public funds, primarily distributed among the principal institutes. Labour market research is primarily financed by labour ministries and VET research by education ministries. This system leads to fragmentation of research and a lack of intersectoral cooperation and contextual perspectives, since research fields are narrowly defined.

In a period of economic problems, financial support for research from international institutions is essential. Its impact in the field of VET research in particular is huge in the CEECs. However, certain adjustments would help to make international aid more efficient and bring it more closely into line with national needs. In particular, there is a need to concentrate on follow-up projects designed to implement research results and recommendations. At national level, coordination mechanisms would increase the transparency of research projects already carried out thanks to international support, in order to prevent duplication of effort and to ensure that national priorities are taken into account.

VET research in the CEECs focuses on two main areas: research into VET systems and contextual research.

Some themes are indicated as regard research into *systems*:

- From the viewpoint of implementing a strategy on lifelong learning, it is important for researchers to clarify their vision of VET and position their work in relation to the various elements of the education and training system. Hence multidisciplinary research must be encouraged, to avoid fragmentation of analysis – and practices (characteristic of the reform process in the CEECs). Unfortunately, such fragmentation currently exists, with initial vocational training being researched separately from continuing vocational training and from the rest of the system, often without particular reference to the labour market or the socio-economic context.

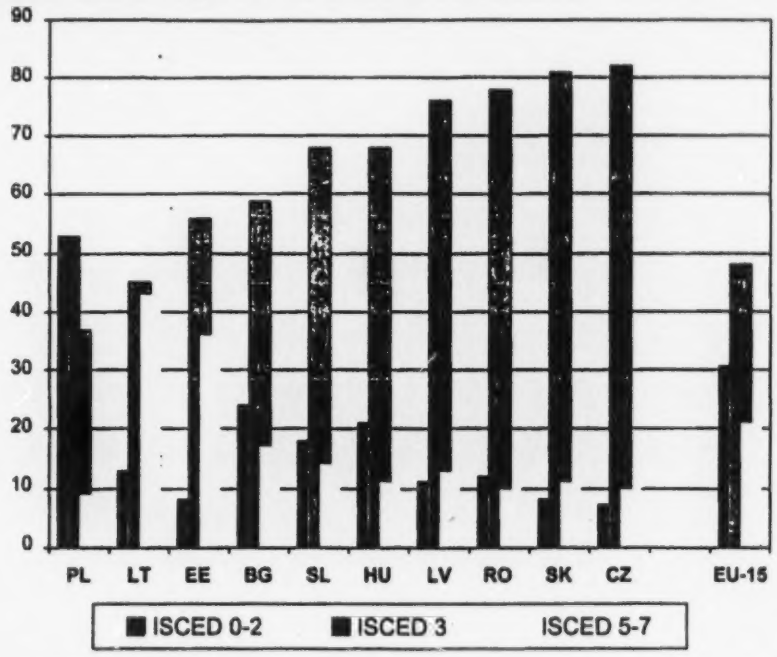
- Research into financing of VET must apply itself to finding ways to encourage the participation of employers in financing and organisation of training. Research must also propose solutions designed to make VET financing more efficient.

- No systematic research has been devoted to continuing vocational training. While initial training has been relatively well researched, there are no data or indicators confirming the development of certain sub-sectors in continuing training. There is also a shortage of research results relating to human resources development (HRD) in enterprises.

- Research into innovative teaching methods (project work, group work, etc.) should be coordinated with the work recently undertaken on training of teachers and trainers. The various elements of this training (transparency, standardisation, updating, etc.) are inseparable from the changes affecting the entire education system (integration between teaching and world of work, evolution of the teacher's/trainer's function in the learning process, new flexible learning methods, opening up of school to the outside world, and the role of the education system in lifelong learning).

- The rehabilitation of organisations in civil society (non-governmental organisations, public and

Figure 10: Educational level of 25-29 years old, 1997, CEECs and EU-15, %



Sources: CEECs: ETF, National Observatories; EU-15: Eurostat.
NB: Sorted by ISCED 3 (upper secondary education)

professional associations, and unions) discredited by the previous regime should be covered by researchers from a broader sociological perspective.

The following observations can be made as regards *contextual research*:

- All the countries have better analytical and statistical coverage of unemployment than of employment. It would be useful to carry out supplementary analyses of unemployment and the impact of measures in support of employment, and of their role in the transition process, in order to have a basis for comparison in evaluating the changes that have occurred in the CEECs in the past ten years.
- Social exclusion, a new phenomenon in the CEECs, is a research subject currently receiving little attention.
- Research into the transition of individuals is definitely too limited to the school/work dimension and neglects other aspects, such as the transition between unemployment and employment, from one type of employment to another, between occupations, etc.
- There are few studies in the CEECs analysing employers' needs in terms of qualifications and skills and their impact on education and training, mainly because they are very costly. In economies in transition, occupational profiles change more rapidly than occupational norms. The added value of research into particular know-how or competences is obvious, as is that of reconstructing current job profiles to update occupational norms.
- In the CEECs, short-term forecasts are more common than medium- and long-term forecasts.

The most convincing research result to date has been the drawing up of a concept for a system of human resources development at national level, in the context of lifelong learning.

However, VET research still suffers from certain weaknesses: too limited a field of investigation, inadequate quality, poor methodological approach and inefficient organisation in some fields of research:

- the global challenges posed by the development of knowledge-based enterprises; the

service sector; SMEs; questions of access to knowledge, information and ICTs;

- conceptual and theoretical research into VET processes and results;
- learners' needs in the context of continuing training and in-company HRD;
- dissemination and implementation of research results;
- multidisciplinary research and collaboration between institutions.

There is a need for backing research, whether national or transnational, in the fields showing certain weaknesses. Similarly, assistance is needed in research fields which, although better covered, are not sufficiently conceptualised and do not possess adequate methodology.

2. VET research in other non-EU countries

This chapter provides a brief overview of VET research in a selected number of non-EU countries. However, apart from time and budget constraints, a comprehensive and consistent survey is hampered because of the very different demarcations of VET (and of VET research respectively), of the multi- and interdisciplinary orientation of VET research and of the heterogeneity of the institutions, associations and researchers in different countries.

In general, there is an increasing VET research focus on the interrelationships between economic development, labour market needs and vocational training. Another research field is pragmatic or policy-oriented research concerning the evaluation or development of system reforms. Other main fields are curriculum research, didactics, methodologies and media in training.

The support of thematic networks and the provision of information (databases, research results, etc.) is of increasing importance. Cooperation and taking on board experiences and suggestions from other countries rank high in the promotion and development of national systems of vocational training. Equally, international or supranational organisations (in particular the European Commission, ILO, OECD, Unesco/Unevoc) are important providers of information, documentation and cooperation.

Brief description of VET research in selected countries:

Due to the reforms to the VET system in *Australia* since the early 1990s, VET research has shown a significant expansion with a number of institutions involved at national and regional level. Current VET research done, for example, by the National Centre for Vocational Education Research (NCVR) focuses, amongst other things, on the economic, social and employment implications of VET; on transitions from school to work; and on the quality of the provision of VET.

The federal system in the *US*, and the manifold training and research activities, hamper a comprehensive overview on VET research in this country. At national level, the National Centre for Research in Vocational Education (NCRVE), for example, conducts VET research focusing, amongst other things, on innovative ways of linking education and work, curriculum research and qualification standards, performance at the workplace and the development of work-related technological skills.

Canada is involved in numerous development projects, international VET research and cooperation and exchange with researchers abroad. School-to-work transitions, reforms of vocational education and further training, skill standards, political and industrial-sociological labour market research and the establishment of research networks are some major topics of relevance for VET research in this country, carried out, for example, by the Human Resources Development Canada (HRDC) and by sector councils.

South America, with the examples of Brazil, Argentina and Uruguay, displays rather heterogeneous training systems and, correspondingly, VET research. .

In *Brazil*, the economic transformation is characterised by high school dropout rates and a high level of illiteracy. Therefore, reforms of the training system, establishing closer links between education, training, work and technology, lifelong learning and the reintegration of adults and young people, rank high in the agenda of VET policy and research, as, for example, carried out by the International Centre for Education, Labour and the Transfer of Technology (CIET).

These problems apply to an even higher degree to *Argentina*, where initial training is almost exclusively the responsibility of the State. Increased international competition and the fact that the level of qualification no longer satisfied firms, led

to a decentralisation of competences in VET and to an increasing involvement of social partners. The relationships between skills, growth, labour market and education/training, human resource development and information technology are some research topics of the recent past, conducted, for example, by the National Research Centre for Human Development (CENEP).

In *Uruguay*, education and training are highly acknowledged and the illiteracy rate is amongst the lowest in the world. Research topics are similar to those mentioned for other countries, supported also by the Inter-American Centre for Research and Documentation (Cinterfor/Cinternet).

In *Japan*, the Japanese Institute of Labour and the Polytechnic University (under the aegis of the Ministry for Labour) carry out numerous research activities also in the field of VET. Economic and employment aspects, working life studies, the development of work skills and research into teaching and learning are only some of the numerous research programmes to be mentioned here.

The reform of the system of vocational education in the *People's Republic of China* since the early 1980s increased the demand for research into steering, reform strategies and monitoring of measures. However, only a relatively limited number of researchers work in VET research fields. Some of the research centres to be mentioned here are the Central Institute for Vocational Training (CIVT) and the Occupational Skill and Testing Authority (OSTA). Applied VET research is most highly valued, e.g. concerning social and economic development, curricula and teachers, educational management and information and support. It is felt, however, that the theoretical basis of VET research is still underdeveloped and that research is too much related to the direct implementation of policy matters.

Russia has a long tradition in 'occupational education', including the development of teaching methods and policy advice, carried out, for example, by the Russian Education Academy and the Academy for Vocational Education. However, VET research is predominantly tied in with the various levels of vocational education – basic vocational education and middle-grade vocational education. Numerous specialised departments are engaged in VET research, increasingly also run by the regions.

In *Switzerland*, a large number of mostly small-scale institutions – coordinated by a coordination unit – are working in the field of educational/training research and school development. In spring 2000, the Federal Office for Vocational Education and Technology (BBT) identified a number of research areas which will be given priority (and funding) in the future. Topics of relevance for VET research include: VET systems; continuing training; costs and benefits of VET; evaluation, steering, quality and innovations; new occupations; and research on young people, gender and disadvantaged groups.

The synthesis report also contains a review of VET related research activities by educational associations and international organisations, in particular the World Bank Group, Unesco/Unevoc, ILO and OECD.[9] Numerous research issues are tackled by these organisations. Moreover, they provide comprehensive material and statistics which are highly useful for international comparisons.

[9] For more details see the synthesis report (Descy & Tessaring: *Training and learning for competence*) and the contribution of Lauterbach *et al.* to the background report (Descy & Tessaring, eds. *Training in Europe*, Vol. 3). Research activities of the European Commission, in particular within the framework of the Leonardo-da-Vinci and the TSER programmes, are integrated in relevant chapters throughout the synthesis report. Similar applies to research done by OECD.

Annex: Contributions to the background report of the 2nd research report

Part one
VET systems, coordination with the labour market and steering

Steering, networking, and profiles of professionals in vocational education and training (VET)
Lorenz Lassnigg

Financing vocational education and training
Andy Green, Ann Hodgson, Akiko Sakamoto, Ken Spours

How to improve the standing of vocational compared to general education. A collaborative investigation of strategies and qualifications across Europe
Johanna Lasonen, Sabine Manning

Certification and legibility of competence
Annie Bouder, Laurence Coutrot, Édith Kirsch, Jean-Louis Kirsch, Josiane Paddeu, Alain Savoyant, Emmanuel Sulzer

The changing institutional and political role of non-formal learning: European trends
Jens Bjørndvold

The problems raised by the changing role of trainers in a European context
Mara Brugia, Anne de Blignières

Part two
Lifelong learning and competences: challenges and reforms

Lifelong learning - How the paradigm has changed in the 1990s
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Training for new jobs: contents and pilot projects
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Vocational training and innovative practices in the environmental sector. A comparison of five EU Member States, with specimen cases
Roland Loos

Company-based learning in the context of new forms of learning and differentiated training paths
Peter Dehnbostel, Gisela Dybowski

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Training and employment in a company perspective

Globalisation, division of labour and training needs from a company view
Johan Dejonckheere, Geert Van Hootegem

Training, mobility and regulation of the wage relationship: specific and transversal forms
Saïd Hanchane (with the assistance of Philippe Méhaut)

The employment and training practices of SMEs. Examination of research in five EU Member States
Philippe Trouvé et al.

Human resource development in Europe - at the crossroads
Barry Nyhan

Reporting on human capital: objectives and trends
Sven-Åge Westphalen

Vocational training research on the basis of enterprise surveys: An international perspective
Lutz Bellmann

Part four
Employment, economic performance and skill mismatch

The skills market: dynamics and regulation
Jordi Planas, Jean-François Giret, Guillem Sala, Jean Vincens

Economic performance of education and training: costs and benefits
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Unemployment and skills from a dynamic perspective
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Overqualification: reasons, measurement issues and typological affinity to unemployment
Felix Büchel

Forecasting skill requirements at national and company levels
Robert A. Wilson

Part five
Individual performance, transition to active life and social exclusion

Training and individual performance: evidence from micro-econometric studies
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The effect of national institutional differences on education/training to work transitions in Europe: a comparative research project (CATEWE) under the TSER programme
Damian F. Hannan et al.

Education and labour market change: The dynamics of education to work transitions in Europe. A review of the TSER Programme
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Selection, social exclusion and training offers for target groups
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Training and employment perspectives for lower qualified people
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Part six
VET research activities outside the European Union

Research on vocational education and training at the crossroads of transition in Central and Eastern Europe
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VET research in other European and non-European countries
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VET related research on behalf of the European Commission

Research on vocational education and training in the current research framework of the European Commission
Lieve Van den Brande

Synopsis of selected VET related projects undertaken in the framework of the Leonardo da Vinci I programme
Cedefop

Targeted socio-economic research (TSER): Project synopses
Cedefop

Cedefop (European Centre for the Development of Vocational Training)

Training and learning for competence:
Second report on vocational training research in Europe. Executive summary

Pascaline Descy
Manfred Tessaring

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